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Textile World

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Editor: Douglas G. Woolf

The Start of a Great Movement

ON THURSDAY of last week, we sat with a handful of men in a rather dingy room in one of New York's oldest hotels. The parliamentary procedure was amateurish. The oratory, if any, was bad. Altogether, the scene was unimpressive, externally.

But, as we sat there, we wondered if we were not being privileged to participate in an event of potentially great significance.

The relatively small beginning of the United States Institute for Textile Research did not bother us. None of the great organizations or movements in the industry has sprung, full-fledged, from inception to immediate and radiant maturity.

On the contrary, we were impressed with the fact that an idea—and a rather difficult one to grasp, at that—had so quickly captured the imagination of those men who traveled long distances to attend the meeting, and of those who, though absent, had subscribed their support.

We were further impressed with the fact that a scientist of Dr. S. W. Stratton's standing had been induced to head the movement; that a man with a background such as that enjoyed by Charles H. Clark was planning to devote the major part of his activities to the cause; and that the list of officers and directors included textile leaders from all sections of the country.

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However, we were not only impressed by the circumstances and significance of the birth of the Institute. Our personal interest and belief in the importance of fundamental technical research gave us something of the close relative's concern over the future of the infant.

We know that we may expect some of the mistakes and mishaps of childhood. But we are anxious that the movement be pointed, from the start, in the right direction; that its objective be clean-cut and dominant; and that it swerve from the path toward that objective to the minimum degree compatible with human fallibility.

The leaders who have created this organization know its objective. It is important that they resist pressure from those who see this end-point dimly, if at all; and from those who, though unwittingly, might think of the future in terms of their own personal interest.

It is important, to our mind, that there be no deviation from the *fundamental* approach to research; that the job of applying the results of that research to practical problems be left to the organizations which today are performing that type of work so admirably.

It is important that the "Library Research" section of the Institute's proposed operating plan be kept entirely incidental to the primary work of fundamental research.

It is important that the Institute approach open-mindly the broad job of investigating the premises upon which the industry's manufacturing technique is based, and that it attack, in their turn, the problems encountered on that highway, rather than to set up in advance a group of specific and detailed problems, all of which may be important of themselves but many of which are incidental to the principal job.

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If the Institute's efforts are diverted into byways, it will be an indication that the industry itself has not yet been thoroughly aroused to the importance of fundamental research. And we would rather see the organization postpone its work completely until such enlightened support is available, rather than to indulge in an abortive experience which might discredit further effort.

All of this may, and does, sound idealistic. But fundamental research, in itself, is idealistic. However it has proved in hundreds of industries to be a practical ideal, returning the investment many-fold in dollars and cents—not in one year, but in five years, ten years, or more; and not to one company or one section, but to all groups.

The Week in Textiles

What's This I See? . . .

"THE COTTON-TEXTILE industry continues to provide one of the most hopeful features of the present business situation." . . . . When we read this statement in the stock market report in Wednesday's issue of the *New York Herald Tribune*, we pinched ourselves to make sure we were awake. . . . . For years we have been accustomed to read statements like the following: "The textile industry continues to be one of the few dark spots in an otherwise brilliant business situation." . . . . The *Tribune's* comment checks with this from *The Business Week:* "Even the long-suffering step-children of American prosperity —textiles, coal, building, agriculture—are now making the bravest display of energy, courage and enterprise and doing most to support the family." . . . . We don't know how other textile men feel about it, but we have the sensation of having secured a new lease on life. . . . . And we believe these words of praise will go to the industry's heart, supplying courage, rather than to its head, supplying fat.

Important Wool Industry Meeting . . .

SINCE A. D. WHITESIDE, president of the Wool Institute, Inc., announced that he would not accept office for another year, there has been doubt in the minds of several manufacturers and spinners what would happen to that organization. Indications are that not only will the work be carried on along approximately the same lines but activities will be enlarged. A meeting of the entire weaving and spinning industry will be held at Roosevelt Hotel, New York, Nov. 19 to consider this vital question.

Italy Cuts Rayon Production . . .

GERMAN RAYON trade remains active and competition very keen, cables one of our European correspondents. Following recent British reduction in prices of acetate rayon comes news of a 10% acetate cut in Germany. Business generally in Britain has improved since the cut. Italy has now curtailed production by 30 to 40% following failure to maintain export trade even at prices lower than any other producing country. Huge drop in Italian production is expected generally to benefit the European industry.

Japan's Silk Campaign . . .

THE PLAN of Japanese silk interests to spend $500,000 annually in this country, to popularize silk, has been placed in charge of a committee of 15, headed by Jihei Inouye, general manager of Mitsui & Co., Ltd., Yokohama, it is announced. . . . . Plan has been endorsed by Silk Association of America, Inc., and the Raw Silk Association of Japan is its chief sponsor. Date for initiating the drive has not been fixed; Japanese interests are understood to favor early action, the first step proposed being the establishing of campaign headquarters in New York.

Water Gas and Rayon . . .

A YEAR OR SO ago a prominent New England chemist exhibited that long-awaited achievement—the fabrication of a silk purse from a sow's ear. . . . . Last spring Dr. Hibbert told of the conversion of sugar into rayon. . . . . This month Dr. P. K. Frolich, of the research staff of the Standard Oil Co. of New Jersey, in a talk on "Pressure as a Tool in the Chemical Industry of the Future," at Columbia University, remarked that he could visualize a synthetic fiber manufactured from water gas by means of high-pressure hydrogenation of water gas. . . . . Chamberlin believes knitted rayon the future clothing of the human race. . . . . All of which leads us to wonder if

The Textile Outlook

The year-end ebb of business is being approached in many textile fields with more equanimity than would have been thought possible a month or two ago. Many cotton goods mills and some silk and knit goods concerns have been experiencing active trade which let up this week for the first time since early October. Cotton goods trade is accepting the breathing spell and no effort is being made to force sales. The statistical position of the market is excellent since production is being handled conservatively and stocks have been much reduced. . . . Wool goods are hopeful that as the fall season ends, as it will during the next few weeks, that more spring orders will be forthcoming. New dress goods lines shown this week were unusually attractive. The price cut in full-fashioned hosiery has dulled demand in this field but underwear and sweaters move fairly well. . . . Raw silk has again eased off but yarns seem in strong position with business running through January.

The Business Outlook

"With business opinion obviously content to throw away the last two months of this year, there is nothing surprising in the continued decline of general business activity to lower levels week after week as the period of even normal seasonal stimulus passes. Our preliminary index for the week ended Nov. 8 fell further, from 81.5% of normal to 79.3%. . . . Declining industrial activity is pulling it down more than general trade, and this fact lends some support to the hope that the lower it goes the sooner it will turn up. That hope would be stronger if this country had only itself to consider, or if there were more immediate promise of prompt and vigorous result from the conferences of central bank heads now going on in Europe. . . . Commodity and stock prices are still being washed down with the tide, but the resistance of cotton and the upturn in copper are encouraging signs of at least temporary reaction."

—The Business Week

Cotton Goods Sales Sharply Exceed Output

Cotton goods sales during October were nearly half as much again as the production for that month, according to statistics released by the Association of Cotton Textile Merchants of New York.

Production during October amounted to 228,866,000 yd., or at the rate of 45,773,000 yd. per week. This was 35.3% less than October, 1929, when the rate was 70,766,000 yd. per week. Sales during October were 335,801,000 yd., or 146.7% of production. Shipments during the month were 270,383,000 yd., equivalent to 118.1% of production.

Stocks on hand at the end of the month amounted to 350,889,000 yd., representing a decrease of 10.6% during the month. Unfilled orders on Oct. 31 were 350,845,000 yd., representing an increase of 22.9% during the month.

The rate of production during October was practically the same as during September, the increase being only 0.4%. As a result of this continued low production, stocks were again substantially reduced, the decrease of more than 41,000,000 yd. being the greatest recorded in any month except September, 1930. Current stocks are lower than at any time during the last 12 months.

This constitutes the most hopeful sign in the present situation since, although demand has improved, manufacturers are not merrily speeding up production but are availing themselves of the opportunity to reduce stocks.

the time is far distant when to secure a new suit we shall only have to drop a quarter in the gas meter.

An Ear Open to Congress . . .

PREFERENTIAL CONSIDERATION will be given by the Tariff Commission to requests from Congress for flexible tariff investigations, but this policy, according to H. P. Fletcher, the chairman, will not be carried to the point of ignoring applications that are of broad public interest filed by private parties seeking adjustment in rates of duty. . . . . The Commission recognizes that if the petitions of private industry are not acted upon manufacturers and importers will turn to Congress with demands that the Commission should be instructed to pursue investigations which they desire to have made. . . . . A hearing on ultramarine blue, duty on which was raised from 3c. to 4c. per pound was held on Nov. 6, importers seeking a reduction in the tariff rate.

Measuring the American Figure . . .

WHAT IS the average stature of the American man, woman and child? This problem, which has brought gray hairs to many garment manufacturers, may finally be solved, if a survey projected by the Bureau of Home Economics, Washington, goes through. The survey will be ambitious in scope and aims at assembly of measurements which would be correlated into a sizing-scale that would actually fit the vagaries of the American figure as to garments, hosiery and gloves. . . . . Plan calls for five years' cooperative work by Bureau and school anthropometrists throughout the country. Methods of measuring and record blanks for use in survey would be developed through actual group measurements taken in different parts of the country and which it is believed would insure a uniformity of approach to the problem. College anthropometrical staffs would cooperate in procuring dimensions of local types.

Charles R. Hook, president, American Rolling Mill Co.

Commends Textile Industry for Developing Facts

THE American Rolling Mill Co., of Middletown, Ohio, is internationally known for its pioneering work in the field of industrial relations and for its scientific approach to the problem of production control, for the good of both workers and management.

Consequently the following tribute to the textile industry, expressed to TEXTILE WORLD by Charles R. Hook, president of that company, is particularly significant in view of his industrial background, and is another illustration of the interest which industry in general is manifesting in new progress in the textile field:

"In order that individual units of an industry use sound judgment in the handling of their production, distribution, financial and industrial relation problems, it is necessary that they be properly informed with respect to the economic facts relating to their industry as a whole. It seems to me that the textile industry has launched a program calculated to bring about such an understanding and is to be commended and congratulated upon its forward movement." —CHARLES R. HOOK.

The Banking Attitude

Toward the Textile Industry

By Henry G. Lord

President, Bragdon, Lord & Nagle Division
McGraw-Hill Publishing Co.

THERE is a prevalent opinion among manufacturers that textile mills are out of favor with the banks. With the object of getting first-hand opinion, I have recently had many interviews with New York and Boston bankers to get their viewpoint of textile credit and their outlook on the textile situation.

One thing seemed evident—the textile mills are no longer the only black sheep of industry in banking opinion. They recognize that the industry has made great progress along the road to recovery and will cooperate without prejudice toward its further rehabilitation so far as they think consistent with sound banking principles.

"So long as 'net quick assets' is the banker's yardstick most generally used, and so long as plant values count for little in credit rating, the average banker does not in my opinion give enough consideration to the radical developments in machinery and processes, which so vitally affect the profit-making possibility of the mills failing to install them."

Almost without exception the assurance was given that there was no discrimination against textile mills as such, but that each case was considered on its own individual merits—management record, earnings statement, and balance sheet.

The depression in the textile industry during the last few years undoubtedly leads to a close scrutiny of textile credits, and in estimates of net quick assets as a basis for credit, several bankers stated that if a textile mill had shown losses in the last few years some allowance would probably be made for further shrinkage of net quick assets until the depression ended.

Plant values apparently count for little or nothing in bankers' estimates of net worth for credit purposes today. Quick assets are the principal factor.

The total volume of bank loans to textile mills is considerably less than several years ago, due to liquidation, to lower price of materials, smaller volume of business and systematic reduction of inventories. There are still many frozen loans which cannot be paid off until business improves or the borrowing mill is liquidated.

Practically all agreed that much progress had been made in financial house-cleaning but that more was necessary and under way. While they did not admit much improvement in the immediate situation, they thought the relative position of the industry to others was improved. Management is better as a whole, selling methods are improving, and there are better control of production and a more receptive mind to plant improvement.

Financing Purchase of New Machinery

In discussing the new machinery development, which is such an outstanding feature of the last two or three years, I asked how the mills could finance the purchase of new machinery which is absolutely necessary to meet competition—would the banks loan money to make such purchases? In every case the answer was that unless the mill's quick asset position justified the purchase without impairment of proper ratio of quick assets to liabilities, the bank would probably not make such loans. This would be true in any other industry. Banks do not think it is within their province to make loans that would be tied up in fixed assets.

If the mill was in sound financial condition with a good management record they would loan up to their usual proportion of its net quick and if the mill wished to spend the money for new equipment wisely bought to replace obsolete machinery and could still maintain a safe quick asset position, they would think well of its policy. When there was a real need to replace obsolete machinery with modern equipment, terms might be arranged with the machinery builders in moderate amounts with a satisfactory initial cash payment. Neither the banks nor the machinery builders will encourage expansion and there is no possibility of reckless building on credit even if there should be a great improvement in the business.

Another Yardstick

So long as "net quick assets" is the banker's yardstick most generally used, and so long as plant values count for little in credit rating, the average banker does not in my opinion give enough consideration to the radical developments in machinery and processes, which so vitally affect the profit-making possibility of the mills failing to install them. A fine showing of net quick assets at the moment may change for the worse even more rapidly than in the past, if plant equipment is not up to modern standards, because difference between the old and the new has never been so great as it is today.

When prices stabilize and textile manufacturing comes back to normal it will be the efficient mills with modern machinery which will fix the price level—and that level will be a reasonable profit over cost to the efficient and modernly equipped mill. A wise banker would do well to insist upon a plant survey which would check up a mill in comparison with a "bogey" up-to-date plant, and if the situation and the management warrant it, should consider it as much to his interest as the mill's to cooperate in bringing the plant up to a state of highest profit-making possibilities, for it is either a potential asset or a contingent liability, and, next to management, the largest factor in the long-term credit situation.

Selling "Cuts" Slices Mill Profits

THERE are limits to everything. Even to patience of manufacturers of woolen and worsted goods. Wholesale objection to the practice of selling "cuts," which has been more prevalent this season than in any in the history of the business, has been made by the larger mills manufacturing wool goods. It is one of those details of trade practice that have developel into giant proportions, staggering those who previously gave it little thought.

First Used for Samples

It has long been the recognized custom for manufacturers and their selling agents to sell "cuts" to clothiers for samples. But the hand-to-mouth impulse has within recent years reached such perfection that clothiers are now, in more instances than manufacturers had any conception, buying cuts not only for samples but to fill small orders.

By means of these cuts clothiers are able to buy any number of yards of a fabric they may desire without buying a full piece. It is hand-to-mouth buying with a vengeance. Its growth has been a natural consequence of poor business with both manufacturer and clothier. The former has not been in a position to dictate trade conditions even in such a small matter and the clothier has not been in any mood to place large orders without first knowing that he could sell the goods without delay.

The ground has been fertile for expansion of the selling of cuts beyond any one's wildest dreams. Now that they are in the middle of the stream in so far as aiding in this undesirable development, mills are becoming anxious how much further it will develop and where it is leading.

An order which in years gone by would have been refused by the average manufacturer, is now taken with thanks. The average order has been growing smaller each season until the point has now been reached where mills no longer look with disdain upon such orders. The selling of cuts has merely been a step along this road.

In view of the present condition of the market there is little or no hope that the practice can be discontinued. In fact, smaller manufacturers would no doubt not agree to any procedure in opposition to it. They would feel that one of the advantages they have over their larger competitors was being taken away from them.

To sell a large number of cuts would be to the advantage of a mill in this position. It would indicate that there was a better chance of getting its lines started with clothiers than if it refused to sell less than pieces.

In cases of this sort the practice can be understood; it can also be understood in cases where small mills are in competition for the same clothiers as large manufacturers. To gain advantage the smaller mill would give good "cut" service, and it must be admitted that this has frequently resulted in giving the larger factors keener competition than could otherwise have occurred.

Consensus of opinion among manufacturers is that the question of cuts is here to stay, at least for as long a period as the market can look ahead. Suitable regulation of it from the manufacturers' view seems to be the one and only solution. If manufacturers would charge prices for cuts that would show them a profit on the transaction, larger sellers believe that practically all of the problems that have arisen in connection with it, would be solved.

As it is, a large buyer has no advantage over a clothier who buys a few yards, instead of pieces. Both are quoted the same price by the manufacturer or his selling agent. In view of this there is no incentive for a buyer to forsake his former policy of buying less than a piece. Until there is some advantage offered to the buyer of full pieces, the practice of selling cuts is sure to grow.

One seller recommends that the manufacturer or selling agent should work out a new cost system for cut business, should accurately determine just how much it costs him to do business of this character, and then should charge accordingly. It thus goes back to the old question of doing business at a loss. So long as mills are willing to manufacture goods for sale at cost or less it is probable they will not see fit to regulate selling of cuts.

Price Should Assure Profit

When mills come to the point where they refuse to sell goods unless there is a fair profit in the transaction, then it will be reasonable to expect them to change this feature of their business which has reacted so much against their interests especially during the last few seasons.

A knowledge of just what it costs to do this "cut" business and then a determination to refuse to accept any business that does not show a profit, are the steps that must come before wool goods mills are relieved of this burden.

Mills favoring such steps immediately say they hesitate to take action for fear their customers will go to competitors who will not change their policy. The only sensible answer to this is that mills which continue such merchandising cannot long remain competitors. They will doubtless be eliminated from the picture in the not distant future, buried under the losses the practice entails.

Rayon brocade, in raised motifs of reddish purple grapes, gold kid appliques and buckles, for the evening dance with gown in matching shades.

White "Silkray" is used extensively for dyeing to match or "jewel-tone" a gown.

A yachting shoe of white-brown- and green-striped rayon with crepe rubber sole to be worn with a white and brown costume made in pajama style.

A rayon tweed morning, shopping or walking shoe with punched and stitched side applique in Almora kid.

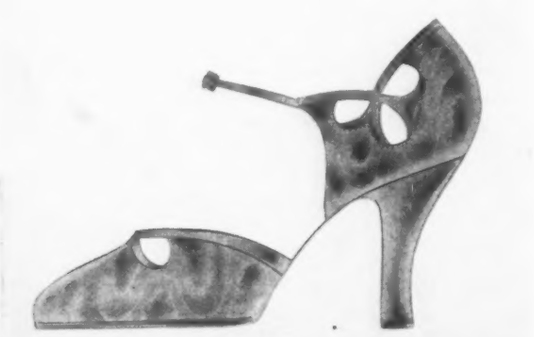
Rayon *Revolution i*

Footwear designs from the "Around the Clock" series of Conaway-Winter Co.

EIGHTY per cent, at least, of evening shoe uppers for the coming winter and spring will be made of textile fabrics. And of these fabrics, more than one-half will be woven with rayon yarn. Not only will rayon enter the realm of evening shoes, but it will also invade the footwear field for morning and afternoon; for sport and for business. Rayon, in addition to endowing fabric with luster renders it less expensive than when made of all-silk. The introduction of rayon into footwear has encouraged other economies which account for the difference in price between a $12 and a $6 shoe. For every shoe made to sell at $12, there are 50 made to sell at $4 to $6. Rayon has made shoe fabrics a volume proposition. Shoe goods houses formerly featuring fabrics from $2 to $5 a yard are glad to "sweeten-up" their line with rayon fabrics, which, at perhaps half the price of the others, find a ready market.

New Effects in Two-Surfaced Monotones

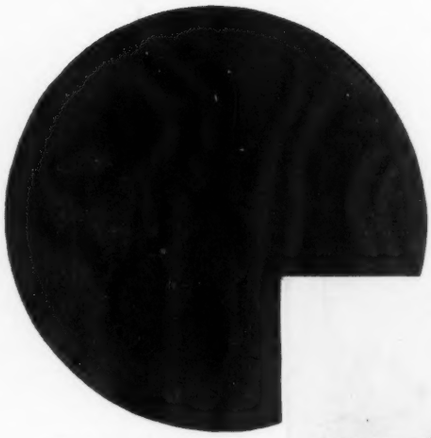
Rayon has made possible the many new effects in two-surfaced monotones, particularly in white, which are looming up so strongly on the fashionable footwear horizon for winter, and for the coming spring. Shoemen predict that the dyed fabric shoe, to match the color of the gown, or the shade of some gown accessory, will be a better seller than last winter, because of the many new weaves and patterns, in which rayon plays a prominent part. For instance, a much-talked-of shoe fabric, first mentioned at the New York style conference last April, was "Faconne." It puzzled some of the shoe goods houses a bit in the beginning, but they soon found that it was an old favorite under a new name—a brocade, with a high-lighted and a low-lighted surface, two different yarns being used to effect this appearance. They also found that rayon combined excellently to make faille, or with cotton or other fibers, to produce "Faconne." When "Faconne" is dyed, its high and low-lighted surfaces produce the "different" and new blendings of a desired shade.



An evening shoe in emerald rayon and silk moire with gold kid trim and covered heel. The gown to be worn with this shoe was in emerald satin into which rayon fibers were introduced.

Shoe goods houses not only sell materials to the shoe manufacturer, but they sell a range of appropriate dyes; several of the more prominent houses interviewed say that practically every white shoe sold, especially in "Faconne," is dyed to suit the individual customer's taste; they state that their dye sales are materially increasing.

"Silkray," one of the new "Faconnes" into which rayon enters liberally, in combination with cotton, is an example of a popular afternoon and evening slipper fabric, which in white lends itself admirably to dyeing. Another



The same pattern in black "Silkray," a popular rayon and cotton weave.

The use of floral designs in formal afternoon one-strap shoe of rayon brocade. The shades are orchid on white. Straps and covered heel are of kid.

Rayon beach shoe with crepe rubber sole for morning wear at southern resorts. Upper in marine blue, red, and canary against white, to match sun suit, parasol, and beach chair colors.

High style sandal of rayon and satin for the afternoon house party. Colors of the shoe match a variety of hostess gown shades.

on izes Shoe Fabrics

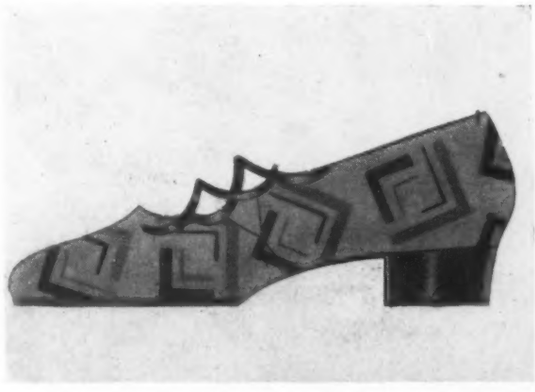
By Helen M. Haney

fabric bought in white for dyeing, in which rayon is combined with silk in a faille weave, is Duo-Tone.

Other rayonized fabrics are Cardwi, woven of rayon and cotton in a fine corded weave; and Crinkelette, which one of the big houses manufacturing shoe goods is selling in place of crepe, because, according to the representative of this house, there has been so much dissatisfaction expressed as to crepe. Rayon enters largely into the weaving of Crinkelette, and is used often for shoe uppers on the reverse side for the required dullness of surface; it is usually combined with a high luster material. It is claimed that Crinkelette, on account of its rayon construction, is soft and silky, and yet firm enough to be most practical as a shoe fabric, whereas crepe is not so easily cut in the factory, or fitted in the shoe store.

Lovely and elaborate are the new French rayon brocades, with silver and gold tinsel, in floral, scroll, and feather designs, and in beautiful blendings of multicolors, affecting Persian patterns. Some of the leading American shoe goods manufacturers have swatches of these fabrics and are faithfully copying them. These delicate fabrics are then properly backed, according to the most approved American shoe-making methods, all ready for the shoe cutter. Paisley, as well as Persian, patterns, are being shown and described to shoe manufacturers as "matching the new handbags," made of these materials. Failles, moirés, and other silks, cottons, velvets, and even woolens and felts, are combined with rayon in the advanced showings of shoe fabrics. Among the new textures is a crepe weave, combining wool and rayon, resembling a gold satin. This wool and rayon crepe has the uneven appearance of metal threads, but the advantage of being untarnishable; the luster is rich, soft, and distinctive.

The wearing qualities of shoe fabrics may be greatly injured, if they are not "treated properly" by the shoe cutter, or by the retail shoe salesman—the former because he fails to lay his pattern "toe to selvage"; the latter because he fits either too long, or too short; or because he fits a "short-vamped" foot with a long-vamped shoe or vice versa. More shoe uppers may be cut by applying the pattern lengthwise, but the loss in waste pieces of the material is far less than the loss entailed by the return of a pair of fabric shoes. There are a few "fool-proof" shoe fabrics, one of which is "Tosca;" this can be cut either lengthwise or toe to selvage. It is made of silk and cotton. Thousands of yards have been sold, and it is still selling for southern wear and for next spring, in natural colors and in white.



A rayon novelty golf shoe, for afternoon southern resort wear. Bright pink and deep blue on white ground. The heel is covered with matching blue rayon.

pH —What It Means to the Mill Man

By Chas. E. Mullin, D.Sc.

What is hydrogen-ion concentration or pH value and what are its applications in the textile industry? Despite the fact that technical and scientific publications have devoted countless pages to this question during the last years, we receive frequent inquiries as to the meaning and value of hydrogen-ion control. In the accompanying article, Dr. Mullin, Professor of Chemistry, Rayon, and Dyeing, Head of Division of Textile Chemistry, Clemson College Textile School, sums up the information which the mill man needs to get a general understanding of the subject of pH control and how it applies in his plant.

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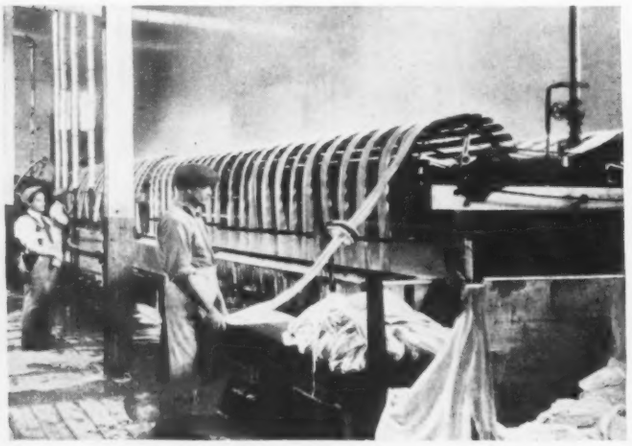
THE terms pH and hydrogen-ion concentration, although not identical, are a means of expressing the degree of chemical activity or "strength" of a solution. Perhaps the best comparison of these terms to a commonly used term is that of temperature. Temperature expresses the degree of heat. Hydrogen-ion concentration, and the abbreviated term pH, express the degree of chemical activity. They do not express the total heat or chemical energy available but define the degree of activity. For example, 100 c.c. of water at 100° C. will melt the same amount of ice as will 1000 at 10° C. But the water at 100° C. will cook an egg or scald your hand, while that at 10° C. will not. The difference in heat is in the degree, not the total quantity of heat available.

For comparison, in the realm of pH we may have a liter each of normal solutions of caustic soda, soda ash, and sodium bicarbonate. Each of these solutions contains the same total quantity of sodium, but the degree of chemical activity in each case is different. We can drink some of the bicarbonate solution without injury, but not the carbonate or caustic solutions. We can wash our hands in the carbonate solution without injury, but not in the caustic soda solution. Even the cold caustic solution will take the skin off of our hands because of the high degree of alkaline chemical activity, which is expressed as high pH. Yet with certain indicators all of these normal solutions will titrate the same. They contain the same total amount of sodium.

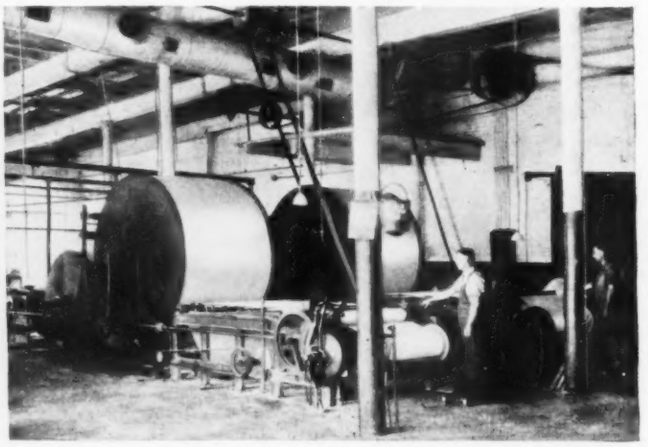
Table I — Approximate pH Values of One-tenth Normal Solutions of Acids and Bases

Hydrochloric acid	pH 1.0
Sulfuric acid	1.2
Phosphoric acid	1.5
Acetic acid	2.9
Alum	3.2
Carbonic acid	3.8
Boric acid	5.2
Sodium bicarbonate	8.4
Borax	9.2
Ammonia	11.1
Sodium carbonate	11.6
Trisodium phosphate	12.0
Sodium metasilicate	12.2
Sodium hydroxide	13.0

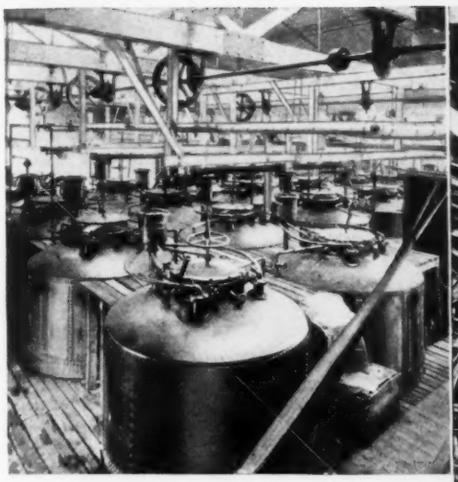
In the same way, we have acids with different degrees of chemical activity. Every one is familiar with the differences in the degree of chemical activity or "strength" of lactic, acetic, formic, sulfuric, hydrochloric, and nitric acids. (See Table I.) Yet, just as in the case of the alkalis, normal solutions of these acids will all titrate the same. The differences in their chemical activity or strength are due to the differences in the degree of dissociation, or splitting up, of the acids in water. In this dissociation, hydrogen ions are freed from the acid mole-



pH in silk dyeing



—in slashing



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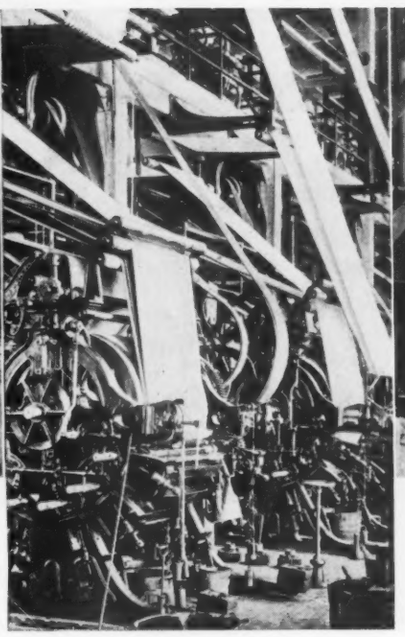
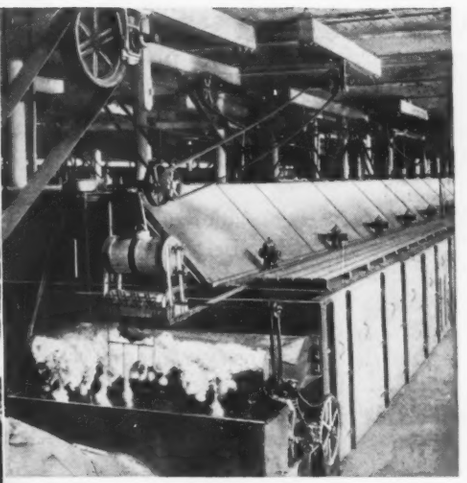


—in printing



—in wool scouring

cule, and hence the term hydrogen-ion concentration. The greater the degree of dissociation of the acid, the greater the hydrogen-ion concentration of an aqueous solution of this acid at any definite normality of acid, and the greater its chemical activity; or as we often say, the "stronger" the acid.

The pH scale is just a means of numerically expressing this strength or degree of chemical activity of a solution. Determination of hydrogen-ion concentration is the measurement of this degree of chemical activity or strength. You might say that in pH determination, the colorimetric or electrometric apparatus used serves the same purpose as does the thermometer or pyrometer in the measurement of temperature.

Dissociation Explained

The term dissociation may not be familiar to some textile men, and although it is not the same as hydrolysis, it may in some ways be compared to it. In the hydrolysis of a compound, water is split up to furnish a part of the products of hydrolysis. For example, when sodium acetate is formed by the union of caustic soda and acetic acid, water is also formed at the same time. $HOOC.CH_3 + NaOH = NaOOC.CH_3 + H_2O$. Likewise, when sodium acetate hydrolyzes, water is split up to complete the original compounds, caustic soda and acetic acid. $NaOOC.CH_3 + H_2O = NaOH + HOOC.CH_3$. But this hydrolysis occurs only in aqueous solution; and in such cases both the caustic soda and acetic acid formed by the hydrolysis also dissociate or split up into ions to some extent. In this dissociation hydroxyl ions (OH^-) are formed by the alkali and hydrogen ions (H^+) are formed by the acid. Due to the fact that the caustic soda dissociates to a greater degree than the acetic acid, more hydroxyl ions than hydrogen ions are formed, and the aqueous solution of pure sodium acetate is always alkaline.

It may simplify the explanation to point out that in the hydrolysis of a salt, the simpler component compounds are formed; but in dissociation only ions are formed. It is the ions that are responsible for chemical activity, and compounds that ionize in solution to only a small degree have a small degree of chemical activity. In other words, they are not active chemically or "strong" chemicals. The mineral oils and barium sulfate are examples of compounds that do not ionize very much in aqueous solution.

The term hydroxyl-ion concentration is seldom used, the term hydrogen-ion concentration being preferred. Theoretically, pure water contains an equal number of hydrogen and hydroxyl ions; that is, 1-gram molecular weight of each in 10,000,000 liters of water, or a total of about 18 grams of ions. Of this 18 grams in pure neutral water, 17 grams are hydroxyl ions and 1 gram is hydrogen ions. In other words, in pure water, or any other exactly neutral solution, the hydrogen-ion concentration is 1 gram in 10,000,000 liters. This expression, 1 gram of hydrogen ions in 10,000,000 liters, is rather clumsy and long and hence the shorter term pH.

Hydrogen-Ion Concentration

Although the terms pH and hydrogen-ion concentration both express the degree of chemical activity of a solution they are not identical. The pH is the reciprocal of the inverse of the hydrogen-ion concentration. In other words, a neutral solution has a pH of 7. More alkaline solutions have a higher pH, and more acid solutions have a lower pH. (See Table II.) Ordinarily, the alkalinity and acidity of the solutions under pH

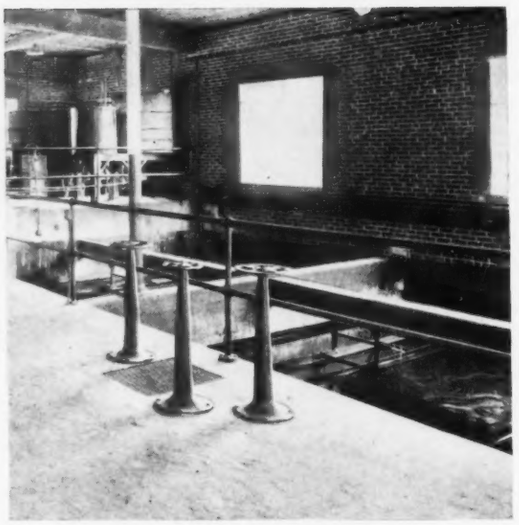
TABLE II—CONCENTRATION OF HYDROGEN IONS (H^+) AND HYDROXYL IONS (OH^-) AT VARIOUS pH VALUES

pH	Grams of H^+	Grams of OH^- per 10,000,000 liters of solution		
0	10,000,000.	0.000,001,7		Increasing acidity
1	1,000,000.	0.000,017		
2	100,000.	0.000,17		
3	10,000.	0.001,7		
4	1,000.	0.017		
5	100.	0.17		
6	10.	1.7	Neutral	
7	1.0	17.		
8	0.1	170.		
9	0.01	1,700.		
10	0.001	17,000.		
11	0.000,1	170,000.		
12	0.000,01	1,700,000.		
13	0.000,001	17,000,000.		
14	0.000,000,1	170,000,000.		Increasing alkalinity

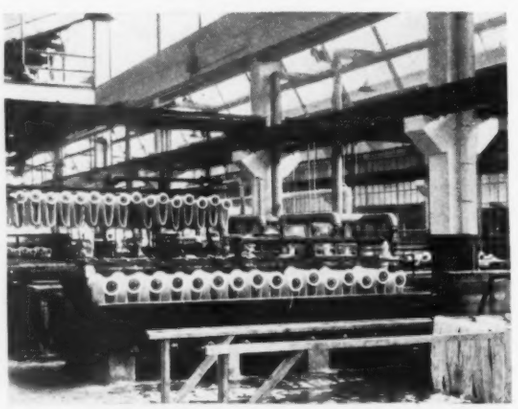
control in most plants fall between the range of pH 0 (strongly acid) and pH 14 (strongly alkaline), but solutions more acid or alkaline are possible in highly concentrated solutions of certain acids or alkalis.

For a general understanding of the subject and its application in the plant, it is only necessary to remember that pH 7 is the theoretical neutral point, pH 0 is very strongly acid, and pH 14 very strongly alkaline. Solutions between pH 7 and pH 0 or 14 are less acid or alkaline respectively. Also that for each change of one pH unit, there is a tenfold change in hydrogen-ion concentration or the degree of chemical activity. In other words, a solution of pH 9 contains ten times as many hydroxyl ions as a solution of pH 8.

It may be noted in the same way, a solution of pH 4 contains ten times as many hydrogen ions, or has ten times the degree of acidity, as a solution of pH 5. All this is not as involved and complicated as it sounds, and a little practice and experience with use, soon renders it simple and easy to remember.



—in water purification



and in rayon manufacture

Control of hydrogen-ion concentration has found many applications in both science and industry. Although this new control factor is particularly applicable to many of the wet processes in the textile industry, it has not been adopted to nearly as great an extent in this industry as in some others.

Applications of pH Control

In the case of cotton, pH control first becomes of interest in the agricultural side of the business, with the pH of the soil upon which the fiber is grown; in the case of wool, with the pH of the blood, stomach, and intestines of the sheep; and with silk, with the pH of the various organs of the silk worm. For example, it is well known that the liquid "silk" in the gland of the silk worm is alkaline, but is coagulated as it leaves the animal by an acid solution, probably at about the isoelectric point of the silk, pH 3.8. Without the highly buffered solutions in the body and the automatic pH control methods of the animal body, life as we know it today would be impossible.

In the same way, but of course to a smaller extent, pH control is important in most of the wet processes of the textile industry. In the case of silk, the first wet process of manufacture is usually that of reeling the raw silk from the cocoon. Here the pH and temperature of the water largely control the degree of softening of the silk gum, as well as the amount of gum that remains in the reeling bath. As the reeled silk is sold by weight it is not desirable to remove any of the gum in reeling if it is possible to avoid this entirely. It is quite possible that pH control may be of value here in controlling the softening and removal of the gum.

In the degumming of raw silk in any form, where it is often desired to leave a part of the gum on the fiber, pH control is equally important because by using a suitable pH much better control of the removal of the silk gum is obtained. Also, it is possible to avoid injury to the valuable fiber in this way.

In silk weighting, pH control is also of great importance, in that by the control of this factor, it is possible to obtain much better and more accurate weighting, with less injury to the fiber and at a lower total cost than by the older rule-of-thumb methods.

Temperature, Time, and pH

Every chemist and dyer knows that temperature and time are often more or less interchangeable in certain reactions, but by the use of the optimum pH in a given process, it may be possible to reduce both the temperature and time of the reaction. In other words, pH is often equally as interchangeable as time and temperature, and by increasing the chemical activity of the bath, other controlling factors may be reduced. Yet at present in many mills the variation allowed in hydrogen-ion concentration is often greater than the permitted variation in temperature. By suitably controlling the pH of scouring or cleansing solutions, it is possible to obtain a given result at a different temperature or in different time from what is usually employed. For example, it is known that as the pH of an alkaline soap solution increases, the surface or interfacial tension of the solution decreases, thus allowing it to wet-out the material more quickly and thoroughly at a lower temperature. At the same time, the pH of the solution also affects its emulsifying action on the dirt present, no matter in what form it may be, but the relation of the pH to the stability of the emulsion is more complicated than the above, in that there is always an optimum pH for the stability of each emulsion.

Scouring, Bleaching, and Dyeing

In the scouring of wool, the pH of the bath is even more important than in the case of cotton, in that wool is amphoteric and combines with the alkali present to form soap-like compounds which are more or less soluble in the scouring bath. Therefore the pH of the wool-scouring bath more or less controls the amount of wool substance removed from the fiber, as well as the degree of injury of the wool fibers.

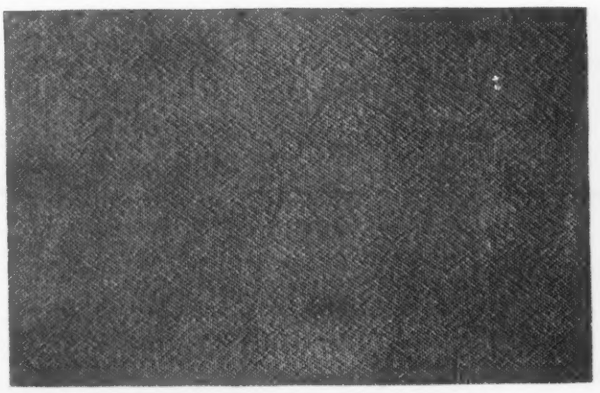
The scouring of many grease wools is largely a

(Continued on page 79)

Improved Methods of Processing *Enhance Appearance of* Cotton-Rayon Fabrics

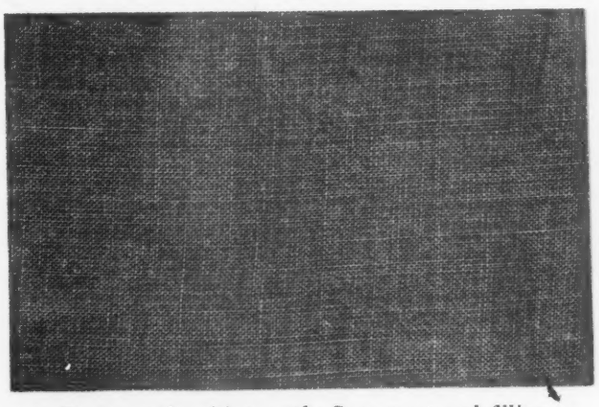
By Ray Cottrell

In the first installment of this article (TEXTILE WORLD, Nov. 8, 1930) the author discussed modern trends in scouring, bleaching, and dyeing piece goods composed wholly or partially of rayon. He now outlines the progress made recently in delustering, weighting, and wrinkle-proofing these fabrics, and considers briefly the finishing of goods containing staple fiber.

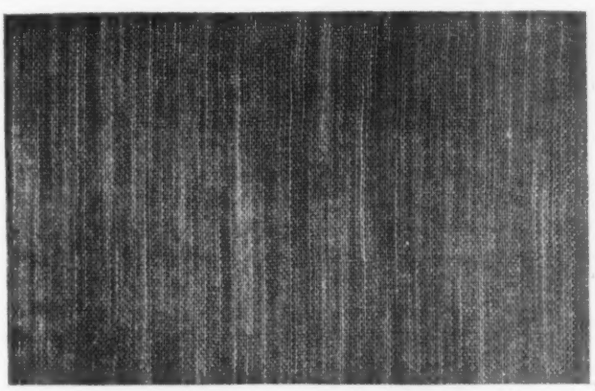


Cotton-rayon crepe

A NATURAL consequence of the introduction of rayon was its use in fabrics which hitherto had always been made from natural silk. Although delustered yarns which closely resemble the appearance of natural silk are manufactured, the majority of rayon is produced with a somewhat metallic luster. It falls to the lot of the finisher to deluster such fabrics in the piece.



Dress goods with two-ply Sase-warp and filling



Cotton-rayon alpaca

In the case of regenerated-cellulose rayons, delustering in the piece is generally performed by depositing insoluble inorganic salts in or on the fiber. For this purpose, the fabric may be treated with basic aluminum acetate, obtained by treating aluminum acetate with less sodium carbonate or bicarbonate than is required for complete decomposition, which on complete drying decomposes to yield the delustering agent in this case alumina.

In another method, aluminium soaps, formed by the initial treatment of the fabric with the sulfate or acetate of aluminium followed by a run through soap, are sometimes deposited on the fiber; but although the luster is undoubtedly diminished, the handle of the goods is affected adversely. Much better results are obtained when barium sulfate is precipitated on the fiber. The fabric is saturated with a 2% solution of sulfuric acid at 120° F. and is then entered into a solution containing about 4% barium chloride. An advantage of this latter method is that it may precede dyeing, but care must be taken to exclude glauber salt from the dyebath, since its hot solutions dissolve barium sulfate to an appreciable extent.

Delustering and Weighting

A further method consists in treating the goods with suspensions of fullers earth, mineral earths, or chalk in sulfonated castor oil, emulsions of paraffin wax and olive-oil soap, etc. One advantage of this process is that the delustering agent may be applied in the quetch along with any other softeners when finishing the fabric on the 90-ft. tenter.

The delustering of acetate cellulose with hot soap solutions is well-known, but a patent has been taken out recently covering the delustering of acetate cellulose by abrasion. The abrasive action usually is performed during winding, and is carried out by means of loose kieselguhr, pumice powder, powdered glass, or car-

borundum. Water-soluble abrasives, such as sodium sulfate of chloride and alum, are also used. Although this method has found application only to yarns, it is quite possible that an adaptation may be applied successfully to piece goods.

Natural silk when degummed loses about 25% of its weight, and this is generally replaced (at least) by means of tannins, logwood, inorganic salts, or other weighting materials. Acetate yarn lends itself to similar treatment, which may be performed by a modification of the usual process with stannic chloride, sodium phosphate, and sodium silicate. The cellulose acetate should be given a preparatory treatment with a swelling agent, such as formic acid; or an addition of the swelling agent may be made to the stannic chloride. Another method of weighting acetate yarn is by treatment with tannic acid in conjunction with tartar emetic, stannic chloride, etc.

Iron-Proofing Acetate Yarns

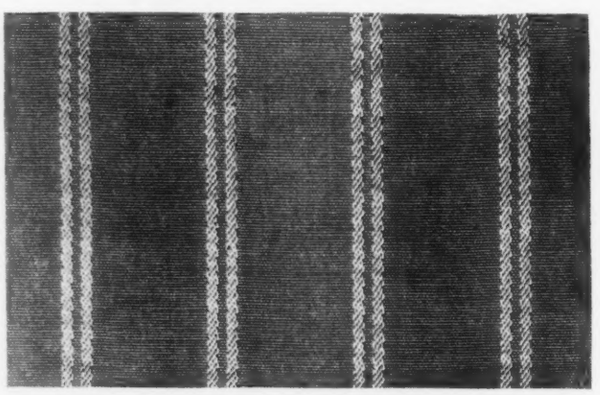
One of the drawbacks of acetate yarns is the ease with which they become glazed and brittle and ecentually melt when exposed to a hot iron. Treatment with the above-mentioned weighting compounds reduces the tendency to melt on hot-ironing, and, incidentally, imparts an enhanced degree of non-inflammability to the fiber. A simpler and more efficient method of increasing the resistance to hot ironing is to give the yarn or fabric a superficial saponification, thereby coating the acetate-cellulose filaments with a layer of regenerated cellulose which resists the action of a hot iron better than the acetate.

This saponification may be accomplished by padding the goods through a cold solution of caustic soda of about 10° to 15° Tw. To increase the evenness of the results a swelling agent, such as alcohol, may be added to the caustic soda.

Although rayon is steadily increasing its entrenchments in the field of quality fabrics, its tendency to crease or wrinkle under intermittent pressure is a serious defect.

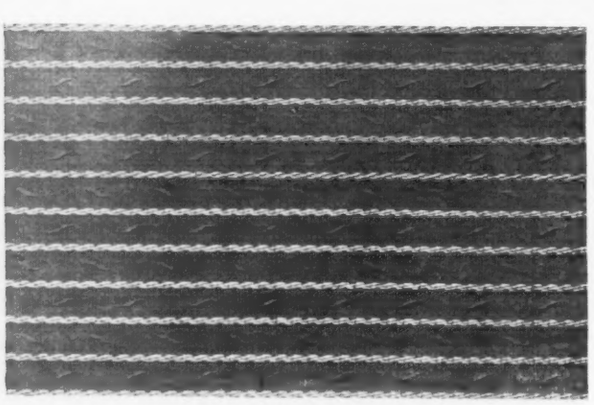
Rayon filaments possess little elasticity—that is, although they will stretch to a considerable extent, they have practically no power of contraction; and it is characteristic of rayon threads that they become brittle and wiry when stretched beyond the point of maximum elasticity. It is logical, therefore, to expect that such threads will be more liable to retain a permanent crease than those which are more pliable and elastic.

Actually this point is borne out in practice; and to avoid the defect as much as possible there must be a general cooperation between all those concerned. Sufficient allowance must be made in weaving to permit, for quality crepe fabrics in general, not less than 15% warp and 10% to 12% filling shrinkage respectively. In other fabrics the allowance is governed by the construction of the goods. Otherwise, the finisher, in order to obtain the required width, must resort to steaming on the tenter, when the rayon, being damp, is easily stretched beyond its elastic limit, although not necessarily its gray width. In order to minimize the tendency of rayon fabrics to crease or wrinkle it is necessary, therefore, to avoid all undue tension in processing and to obtain the maximum practicable shrinkage.



Rayon warp-striped poplin

Cotton rayon corset cloth



Fancy broadcloth with rayon warp stripe

This naturally raises the question of the processing of all-rayon crepes, with regard to the finishing of which there appears to be considerable difference of opinion. Celanese crepes are generally scoured to the best advantage in the regulation "boil-off" vats, either suspended on sticks or by strings attached to the selvage of the folded goods. They are subsequently dyed in the winch. Certain constructions, such as crepe-backed satins, are better processed in the "star" or "etoile" machine, in which the material is held on a framework which is capable of being immersed and revolved in a suitable dyebath.

As mentioned previously, the successful processing of crepe fabrics is dependent on the absence of all tension on either warp or filling, the crepe effect being dependent on the shrinkage allowed.

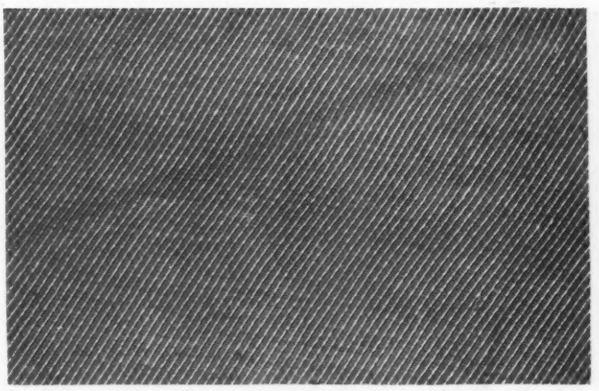
The higher-quality rayon crepes (128x96 and up) may be scoured in the boil-off vats and dyed on the winch; but successful attempts have been made to process these fabrics by padding with boiling solutions of monopole oil and a wetting-out agent, plaiting the goods down on trucks for about an hour, and then scouring and dyeing on the winch.

This latter method of processing has the advantage of avoiding the tedious preparation of the goods for the boil-off vats, and also insures an even and thorough wetting-out of the fabric.

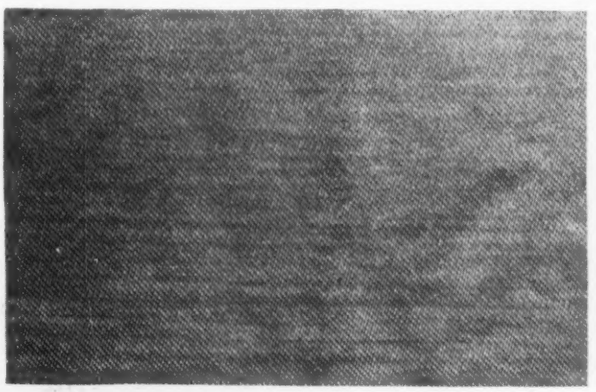
Lower constructions require greater shrinkage, and unless this is accomplished evenly and the crepe effect thoroughly "set" at the start, subsequent processing will result in "rivering" or "dyebreaks." Fabrics of this type are padded in 2° to 4° Tw. caustic soda, plaited down, allowed to lie for about an hour, washed in hot water, and subsequently scoured in the winch for 45 min. at 180° to 200° F. For scouring the following solution may be used: 3% olive-oil soap, 1.5% trisodium phosphate, and 0.75% emulsified solvent calculated on the weight of the goods.

After dyeing in the winch, the goods are hydro-extracted, the better-quality fabrics and those required with little or no "pebble" being dried over the 90-ft. tenter to about 37½ in. (42½ in. gray). The softener is applied in the quetch in the usual way.

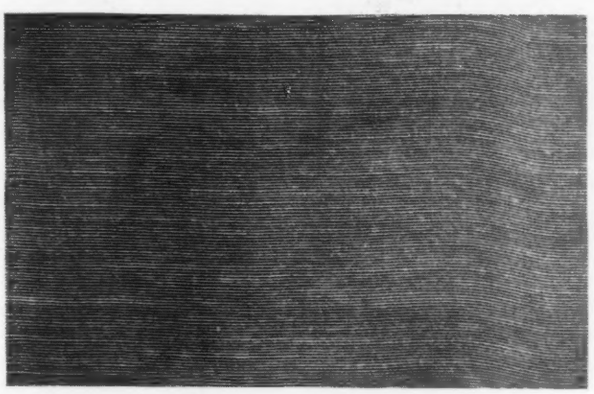
The goods are then passed through a combined quetch (containing more softener) and a crepe or hurricane drier, conditioned, passed over the Palmer, and—if necessary—finished over a 30-ft. tenter. Generally speaking, however, rayon crepes are treated with the softener in the dyebath after dyeing, hydro-extracted, dried on the crepe drier, passed over a 30-ft. tenter heated with steam and gas, and finished on the Palmer.



Twill lining material with rayon warp



Rayon warp sateen



Shantung crepe with rayon warp and Sase filling

Staple Fiber

Fabrics made from staple fiber are of increasing importance. A fabric made from staple fiber has a particularly attractive subdued luster and an unusual softness (for a synthetic fiber), resembling that of wool fabrics, which make it valuable as a dress material.

The better-class fabrics, made of two-ply yarn warp and filling, have a decided tendency to crease during scouring and dyeing; consequently special precautions must be taken when handling these goods. They are preferably padded in monopole oil or a similar material prior to scouring in the winch; scouring should be of sufficient duration to allow the fabric to assume its maximum shrinkage; but if creasing after scouring is suspected, the goods should be batched on rolls and allowed to lie for 24 hours, when the creases will have disappeared.

For a muslin finish, the goods are singed on the face, scoured and dyed on the winch, hydro-extracted, and dried on the 90-ft. tenter, allowing a shrinkage of about 5%. An addition of 2½ lb. of monopole oil and 2½ lb. of olive-oil soap per 100 gal. to the quetch gives the material a fuller handle. After conditioning, the goods are lightly napped on the back and finally are put through a felt calender to increase the luster on the face.

For a silky finish, the goods should be singed on both sides; scoured and dyed on the winch; rinsed, without washing, in soap; run through a cold solution of either formic or lactic acid; hydro-extracted; and tenter dried. The luster may be enhanced by giving a light calendering between steel and cotton rolls, the steel roll being slightly heated. For shirtings, the goods should be singed on both sides; tenter dried after dyeing, using a similar softening to that for the muslin finish; and finally calendered through the felt calender. Special care should be exercised when wet processing fabrics made from staple fiber since the wet strength of these goods is very low.

●

The appearance and handle of cotton-rayon piece goods depends largely upon the methods by which they are processed in the finishing plant. Progress made by the dyer and finisher in handling these fabrics has been a major factor in the growing popularity of rayon.

Varied Twill Effects Used in Narrow Fabrics

*By Edwin J. Gibbons**

OF ALL the twill-weave derivatives used in the manufacture of narrow fabrics, pointed twills are probably the most frequently employed. Their use ranges from the light, simple stay webs to the heaviest materials. The most familiar type is the true herring-bone weave. This is a comparatively small pointed twill in which the points traverse the fabric on an even plane, and usually interlace in two-up-two-down or three-up-three-down order.

Pointed twills are formed by carrying the twill line for a certain number of ends in one direction and then reversing the direction of the twill. Unlike broken twills, no breaks occur as the direction of the twill line changes. Instead, the last end of one twill line forms a point and the first end of the opposite twill line interlaces in exactly the same order as the end preceding the point or center end.

The number of picks in one repeat of the weave is always equal to the sum of the twill used. To find the number of ends in one repeat, the weave must be carried out on design paper.

Fig. 30 shows a simple pointed twill made from the two-up-two-down twill using four ends of right twill and four ends of left twill. The design shows three repeats of warp and two repeats of filling.

Fig. 31 illustrates a narrow fabric in which a pointed twill weave is employed. This is a true herring-bone effect.

Fig. 32 shows two repeats each way of a fancy pointed twill made from the three-up-two-down-one-up-two-down regular twill using seven ends of right twill and three ends of left twill. Note the straight chain. Beginning the draft on the second harness avoids an unnecessary break in the draw.

Weaves of a loose nature should be avoided in making regular pointed twills because of the long filling floats that would be formed just below the point. This fault may be overcome, however, by stitching the float in a regular twill order as illustrated in Fig. 33.

Pointed twills may also be formed by causing the points to run from side to side instead of up and down. In forming this variety of pointed twill the weave is first laid out along the first pick and then carried upwards for as many picks as required, or to the point. After the pick that is to form the point is painted in, the twill line is carried in the opposite direction to a repeat. The number of ends on which the weave will repeat is always equal to the sum of the twill used. To determine the number of picks in one repeat, the weave must be carried out on design paper. The first end must always begin with a single raiser.

*This concludes the article by Mr. Gibbons in the August 30 issue of TEXTILE WORLD.

Fig. 34 shows two repeats each way of a pointed twill using ten picks right twill and eight picks left twill. The twill used is the two-up-one-down-two-up-two-down-one up-two-down.

Fig. 35 illustrates a fabric in which the order of interlacing is the two-up-two-down twill, thirteen picks right twill, eleven picks left twill.

Pointed Curved Twills

Pointed curved twills are formed by carrying a curved twill weave for a given number of ends to the right and, after omitting the last end (or two ends, if the weave finishes with the 27° twill), which forms the point, continuing in the reverse order as in regular pointed twills.

The number of picks in one repeat of the weave is

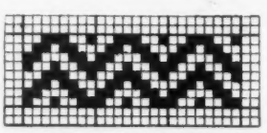


Fig. 30. Simple pointed twill

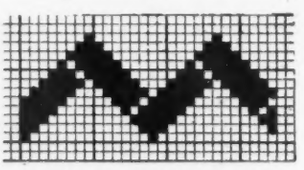


Fig. 33. Stitching the float in regular twill order

Fig. 31. True herringbone effect

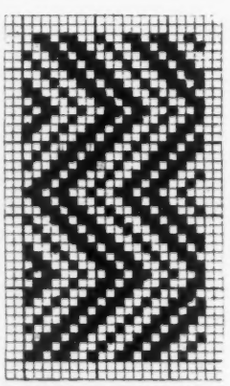


Fig. 34. Points running from side to side

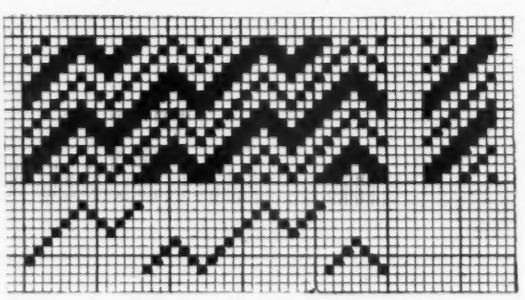


Fig. 32. Fancy pointed twill

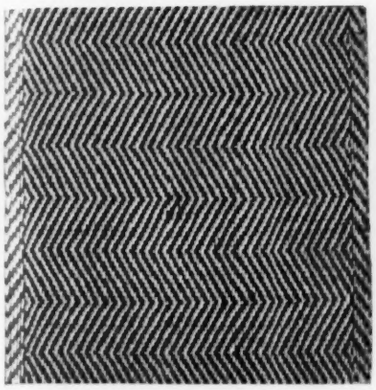


Fig. 35. Employing the two-up-two-down twill

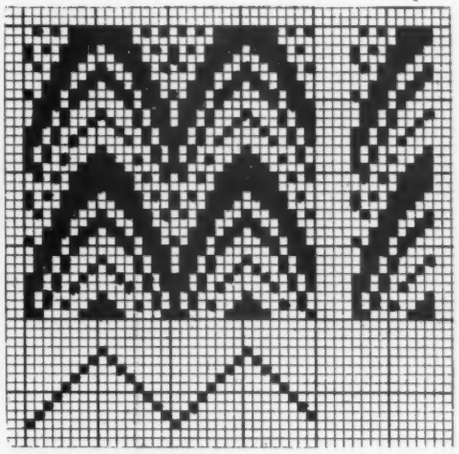


Fig. 36. Pointed curved twill

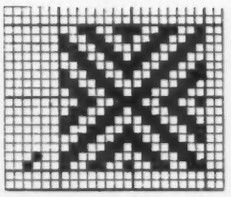


Fig. 37. Figured pointed twill

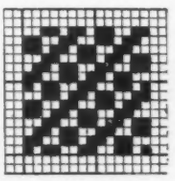


Fig. 39. Basket weave imposed

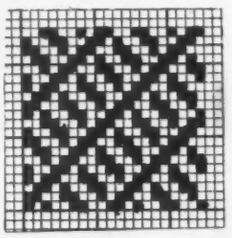


Fig. 40. Left-hand twill imposed

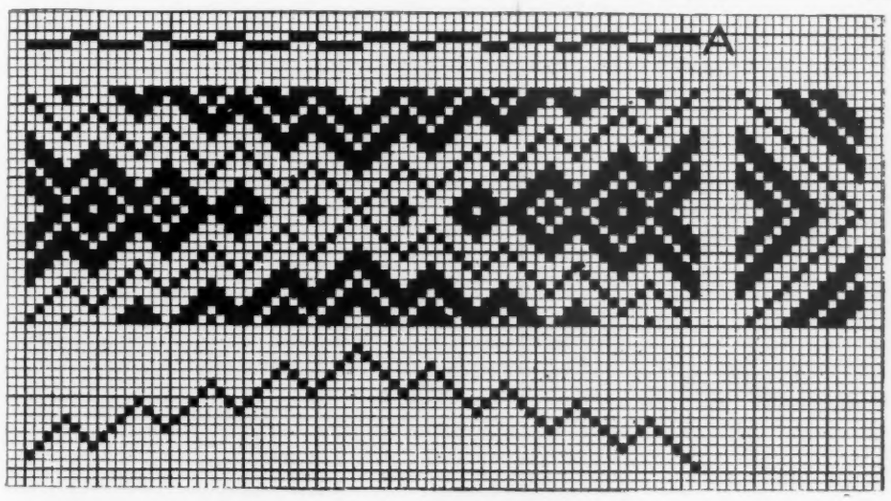


Fig. 38. Elaborate fancy pointed-twill weave

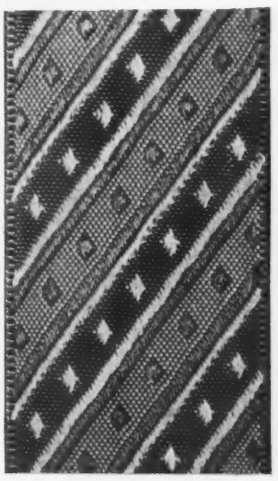


Fig. 41. Suspender fabric with fancy-twill effect

always equal to the sum of the twill used. The number of ends in one repeat of the warp is usually twice the number of ends in the first twill used minus two.

Fig. 36 shows two repeats each way of a curved twill constructed from the five-up-three-down-one-up-three-down-two-up-two-down twill, together with the harness draft and chain draft.

Figured Pointed Twills and Fancy Twill Effects

Figured pointed twills are constructed by causing the twill lines to form points both warp-wise and filling-wise. They are usually constructed according to a motif, the right-hand twill being placed on the spaces represented by the raisers of the motif, and the left-hand twill on the spaces represented by the sinkers of the motif. The last end and the last pick of a twill line running in either direction must always constitute the point.

Fig. 37 shows a two-up-two-down figured pointed twill made from a plain-weave motif in which each block in the motif represents eight ends and eight picks.

Fig. 38 illustrates a rather elaborate fancy pointed twill weave, constructed from the three-up-one-down-three-up-three-down-one-up-three-down twill, together with the harness draft and chain draft. In the motif, shown at *A*, each block represents one end and thirteen picks. Beginning the drawing-in draft on the second harness eliminates the necessity of a break in the center of the draw.

Fancy twill effects are widely used for ornamenting narrow fabrics. They are formed by employing twills that produce wide filling bands and by placing other weaves on these bands. Small basket weaves, warp- or filling-rib weaves, small figures, or opposite twills may be used for the purpose of figuring. The number of ends and picks on which the weave will repeat is usually equal to the sum of the regular twill used, though there are exceptions.

Fig. 39 shows a two-up-five-down regular twill, on the filling floats of which has been imposed a 2-2 basket weave. The design represents one repeat each way, requires two repeats of the foundation weave.

Fig. 40 shows two repeats each way of the two-up-eight-down regular twill, on the filling floats of which has been imposed a two-up-two-down left-hand twill.

Fig. 41 illustrates a suspender fabric in which a fancy twill effect is incorporated.

Pointed twills, broken twills, figured pointed twills, figured broken twills, and a host of various combinations may be used in the production of fancy twill effects.

Entwining Twills

Entwining twills are the most unique of all the twill-weave derivatives and are often used in the construction of narrow goods both by themselves and in combination with other weaves. Belting, suspender material, and lingerie tapes commonly employ these weaves.

Entwining twills are formed by causing groups of right-hand twill to alternate diagonally with groups of left-hand twill—neither twill interfering with the other. Every twill line must extend over the space of one-half

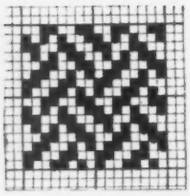


Fig. 42. Two-up-two-down entwining twill

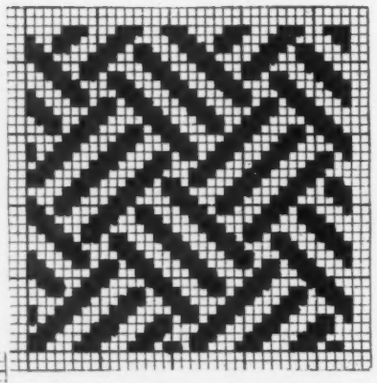


Fig. 43. Three-up-three-down entwining twill

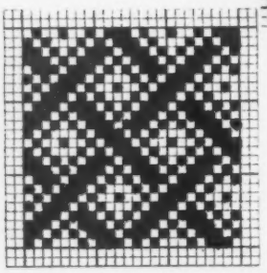


Fig. 44. Fancy entwining twill

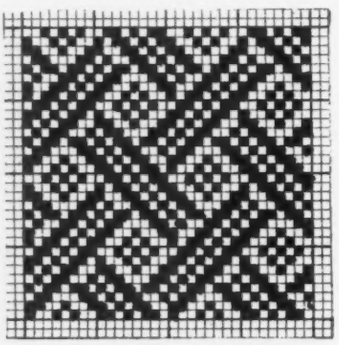


Fig. 45. Note treatment of either end of twill lines

Fig. 46. Suspender fabric with fancy entwining twill

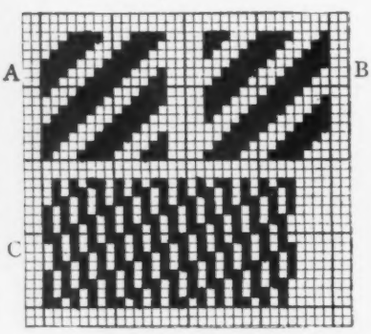


Fig. 47. Evolution of a corkscrew weave

the number of ends in one repeat of the weave. The number of ends and picks in one repeat of the weave is always equal to the product of the sum of the twill multiplied by the number of twill lines to be used. For instance, using two twill lines and the two-up-two-down twill (the sum of which is four), the weave will repeat on eight ends and eight picks (four times two); and each twill line will extend over four ends (one-half of eight). The two-up-two-down, the three-up-three-down, and similar twills are the most suitable for these weaves.

The method of constructing an entwining twill is as follows: First carry the twill line to the right for one-half as many ends as there are ends in one repeat of the weave. Then, beginning at the space representing the intersection of the next end and pick, as if forming a broken twill, paint in one line of the opposite (left-hand) twill. Using this line of left-hand twill as a guide, paint in the remaining lines of right-hand twill below the first line of right twill, always observing the proper order of interlacing. A second group of right-hand twill lines may next be filled in on the space reserved for the second repeat of the filling; and then, using the lowest line of this group as a guide, the remainder of the first group of left twill lines may be painted in. The remaining portion of the design may be completed accordingly. Two repeats of a design are usually necessary to show the effect.

Fig. 42 shows two repeats each way of the two-up-two-down entwining twill using two twill lines.

When employing the three-up-three-down twill, two different methods of treating either end of the twill lines present themselves. Regardless of the method employed, however, the number of ends and picks in one repeat of the weave remains the same.

One method is to add a single raiser next to the central raiser in the float of three at either end of the twill line. In this case the number of ends over which each twill line shall extend will be one-half the number of ends in one repeat of the weave plus two. For example, using three twill lines: 6 (sum of the twill) $\times$ 3 (twill lines) $=$ 18, $\div$ 2 $=$ 9, $+$ 2 $=$ 11 ends. This design may be started with a single raiser.

The second method is to start and end each twill line with two raisers, thereby making every twill line pointed. In this case the number of ends over which each twill line shall extend will be one-half the number of ends in one repeat of the weave plus one. To illustrate, using three twill lines: 6 (sum of the twill) $\times$ 3 (twill lines) $=$ 18, $\div$ 2 $=$ 9, $+$ 1 $=$ 10 ends.

Fig. 43 shows two repeats each way of the three-up-three-down entwining twill using three twill lines and starting and ending each twill line with two raisers.

When employing the four-up-four-down twill, it is customary to add a float of two raisers at either end of the twill line. In this case the number of ends over which each twill line shall extend will be one-half the number of ends in one repeat of the weave plus two.

Fig. 48. Narrow fabric with corkscrew weave

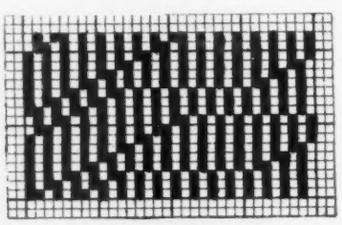


Fig. 49. Combination of seven-up-two-down and three-up-six-down twills

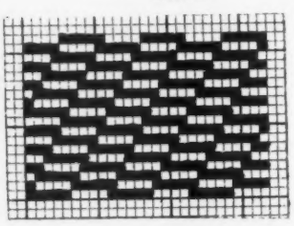


Fig. 51. Corkscrew weave constructed filling-wise

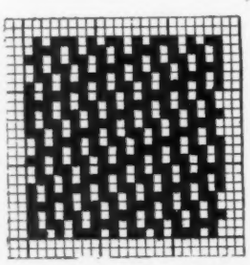


Fig. 50. Additional raiser breaks long float of sinkers

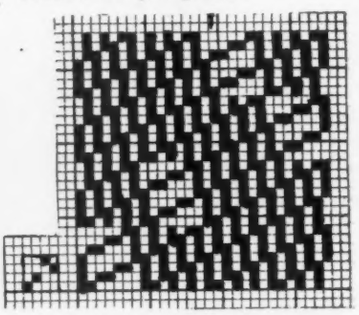


Fig. 52. Figured corkscrew weave

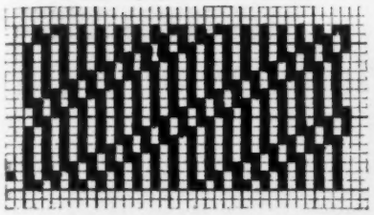


Fig. 53. Curved corkscrew weave

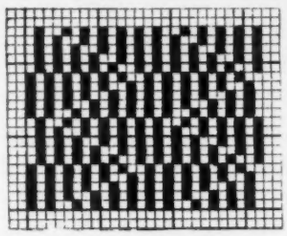


Fig. 55. Combining left and right corkscrew twills

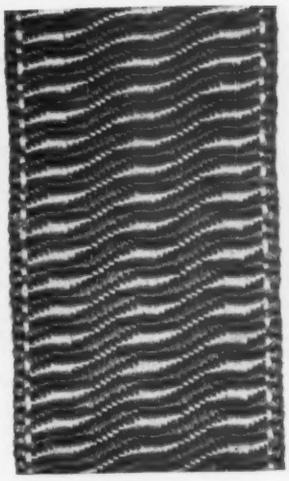


Fig. 54. Suspender fabric with corkscrew weave

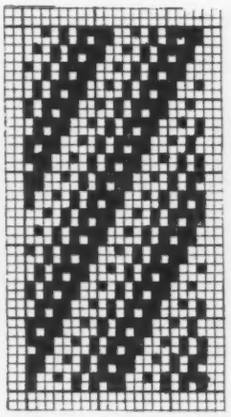


Fig. 56. Shaded twill, 63%

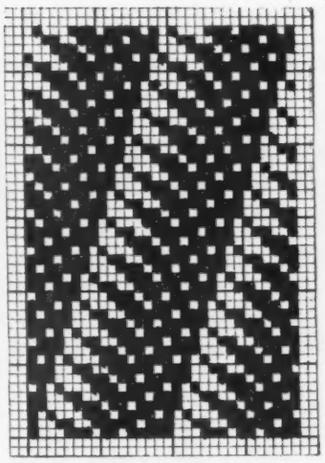


Fig. 57. Shaded twill, 70%

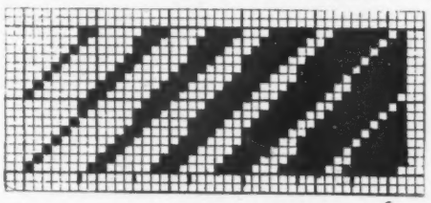


Fig. 58. Changing from filling effect to warp effect

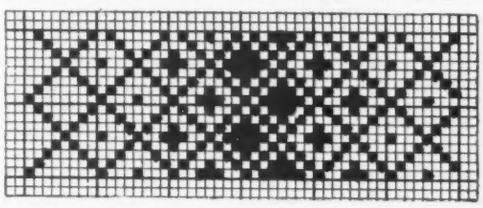


Fig. 59. Shaded weave made from fancy pointed twill

With other weave combinations the designer must use his own judgment.

Fancy Entwining Twills

Fancy entwining twills also are used extensively in narrow fabrics for beltings, suspender material, and lingerie tapes. They are formed similarly to the regular entwining twills, but from weaves having long filling floats. The result is diamond-shaped blocks of sinkers upon which may be imposed small figures of regular or irregular shapes.

As in the regular entwining twills, it is necessary to construct two repeats each way in order to show the weave effect best. The number of ends and picks in one repeat of the weave is usually equal to the sum of the twill used.

In constructing fancy entwining twills, the lowest (first) raiser of the design may be carried upwards and to the right for a number of ends equal to three-quarters of the sum of the twill used. Using the last raiser in the line so formed as a point, designate by light pencil marks a twill line running upwards and to the *left*, back to the starting end. The balance of the first repeat of right twill may then be painted in, but it must not extend beyond the diagonal line of pencil marks. A similar line of right twill may then be painted in on the second repeat of filling, and another line of right twill on the second repeat of warp. The first line of left-hand twill is then painted in, starting above the diagonal line of raisers of the first repeat of right twill and extending upwards to the left and downwards to the right over the space intervening between the second filling repeat of right twill and the second warp repeat of right twill.

All of the other twill lines in the design must extend over the same number of ends and picks as this first line of left twill, and the two different twills must not interfere with each other.

If the twill comprises a float of three raisers, it is customary to center a single raiser at either end of the line. Likewise, in a weave having a float of four raisers it is customary to center a float of two raisers at either end of the twill line.

Fig. 44 shows two repeats each way of the three-up-nine-down fancy entwining twill in which ornamentation has been effected by a simple arrangement of additional raisers on the filling float.

Fig. 45 illustrates the manner of constructing a fancy entwining twill from the two-up-one-down-one-up-one-down-two-up-nine-down twill. Note the treatment at either end of the twill lines. Fig. 46 illustrates a suspender fabric in which a fancy entwining twill is incorporated.

Corkscrew Weaves

Corkscrew weaves are constructed from the regular twills and may be formed by placing a regular twill on the odd-numbered ends, and then placing the same twill on the even-numbered ends in such a manner as to cause the raisers of the even-numbered ends to occur opposite the sinkers of the odd-numbered ends, and vice versa. In other words, each end in every pair of ends, so far as the weave will permit, interlaces counter to its mate. The number of ends per inch is usually greater than the number of picks per inch, and the filling lying between the floats of the face and back ends is almost invisible.

Fabrics constructed of corkscrew weaves closely resemble those formed from warp-rib weaves, except that in the corkscrew weaves the rib lines traverse the fabric at an angle, the degree of which depends upon the texture (ends and picks per inch) of the material.

The number of picks in one repeat of the weave is always equal to the sum of the twill used. The number of ends in one repeat of the weave depends upon the twill or twills used and how they are combined, but is always equal to, or a multiple of, the sum of the twill.

If two different twills are combined to form a corkscrew weave, the sum of the two twills should be the same. With two different twills and contrasting colors effective patterns may be produced. Fig. 47 shows the evolution of a corkscrew weave. At *(continued on page 83)*

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

◆

Putting Over New Ideas

Editor, Overseer's Round-Table:

I THINK a good way to put over a new idea is for the overseer to select a small group of his most intelligent workers. Explain to them the change that is going to be made, why it is going to be made and the advantage it will be to the workers. Sell them the idea, and they in turn, in their own way, will sell it to the rest of the workers.

The overseer who is producing nearest to 100% does so by coaching, not driving, his help. W. TUER.

Editor, Overseers' Round-Table:

HONESTY IN your dealings with everyone, especially your employees, is the only policy. The average employee is wide awake and he resents having his intelligence insulted. There is nothing that is more provocative of discontent than trying to "put it over" on employees.

If a new wage scale must be adopted tell the employees the truth about competition and other factors. If the truth cannot be told then a company cannot complain if employees rebel. In my experience with mill labor I have found that employees are not savages. They are rational men and women willing to discuss quietly and dispassionately matters of interest to the company and to themselves. Trying to delude employees is a foolish and dishonest policy.

SAMUEL N. SELMAN,
Fox Chase Knitting Mills Inc.

Editor, Overseers' Round-Table:

TELLING OPERATIVES that they can make more money under proposed new methods should always be one usable selling point, because any new method worth trying must be an improvement over the old and mean greater gross earnings, a share of which the worker will feel entitled to. If the new method is not profitable, why use it? The only time in which this rule could not apply would be in the case where the workers were receiving, under the old method, a higher wage scale than conditions justified. Even then the new method should not be used as a blind for reducing the ratio of wages to actual earnings but the situation explained frankly to the workers.

RAYMOND COOK.

On Company Cafeterias

Editor, Overseers' Round-Table:

I THINK that a company cafeteria is beneficial to the workers and a sound proposition. Any foresighted manager who employs more than 150 can see the benefits of a cafeteria. Every day he is drawing together 85% of his workers and the first thing he knows he has a big happy family, ready to respond to his suggestions. All workers are not money mad, but rather prefer congenial working conditions to high wages.

I know of two plants that have cafeterias. One gives away a free lunch which would cost Bill 35c. on the outside. The other has turned the cafeteria over to an experienced man with the stipulation that he provide good food at reasonable prices. Those who bring their own lunch get free coffee.

C. E. S.

Editor, Overseers' Round-Table:

EVERY LARGE plant should cater to its employees and have a cafeteria. Under proper management it should be successful. The writer had an opportunity, recently, to visit a large industrial plant where he was served an appetizing meal for the small sum of 20c. This plant was serving coffee, which cost 43c. per lb., at 1c. per cup, and the writer

On Methods of Paying

"I KNOW from talking with you, and from your discussions here," Superintendent Chase addressed the overseers, "that practically all of you believe that an overseer is entitled to a straight salary, rather than being paid by the hour or by the day. However, you have all heard about various task and bonus plans for paying the operatives, and in most such plans the overseer gets a certain portion of the bonus. I don't think we will discuss the whole problem at this time, but I am anxious to get your opinions on one particular point. Regardless of how the operatives are paid do you think it a good plan to give overseers a drawing account, or salary you might say, and then set up a par figure for each department and give the overseer a bonus when he beats the par? In other words determine how much the payroll of a department should be for a certain production and then give the overseer a percentage of the savings if he gets out the production for less than the figured payroll."

"It sounds like a pretty good plan to me," Pete immediately replied, "and I think that if it were properly worked out we would all like it. It gets down to the fact that about everyone works better if he has an incentive and knows he is going to get paid for extra effort. I suppose that the way such a plan would work out would be that the overseer would get a fair drawing account so that on an average week he would get, in drawing account and bonus, about the same as he gets now in straight salary, but when, by hard work, he makes some savings he will be rewarded by some extra money. I think such a plan would lead a man to take more interest in his work and give him the satisfaction of knowing that he will be repaid for anything he does beyond the ordinary run of work."

"It all sounds so pretty," Bill came back laughingly, "that I hate to throw cold water on it. I'm

Overseers

one of those birds who believe that a man should have a certain amount of peace of mind to do a good job. All this high pressure stuff may pep a man up for a time, but in the long run he is going to worry and fret about the bonus so much that he isn't in the right mood to do good work. Then there is the question of quality. Don't you think that there is always a temptation to cut a few corners and jam the work through anyway just to get a bonus? Another point, which I admit isn't a very nice one, is the temptation to beat the bonus by sort of holding back one week, knowing that you'll get the drawing account no matter how low production drops, and then jamming it all through the next week so a big bonus will result. All things considered I'm in favor of giving a man a straight salary so he won't have to worry about anything but running his department. In these days he has to put out lots of effort anyway or he'll be looking for another job."

◆

Do *you* overseers prefer to work on a straight salary or some task and bonus plan such as Superintendent Chase has suggested?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

was informed that the cafeteria had been in operation four years and showed a balance on the right side of the ledger.

The bringing in of lunches to eat in the cafeteria should not be allowed. It is unsanitary and helps to spread vermin, which we all know are destructive around a plant.

JOHN PICONE
Supt. Paris-McGill Mfg. Co.

Paying Workers by Check

Editor, Overseers' Round-Table:

I HEARTILY endorse the idea of paying by check. This is a safe method and we all know that there is no substitute for safety.

I am inclined to the belief that Bill is all worked up over nothing. I am sure that this method of paying will inflict no such hardship on the workers as he describes. The company can easily make arrangement with some bank or merchant to cash the checks for them; in fact most progressive merchants are glad to have the opportunity of cashing the checks.

It has been many years since I heard of anybody trying to discount a check for the favor of having it cashed and I am of the opinion that if some shark was to attempt it, he would find that the worker had more sense than to discount a check that was good as gold.

I cannot see that it would save the office force any great amount of work either way, but it will at least make the money and the lives of those handling it safer to pay by check.

W. B. STIDHAM

Opinions on Night Work

Editor, Overseers' Round-Table:

NIGHT WORK in the textile industry should be eliminated, and should be eliminated immediately, while the business depression is on. Night work is not profitable when all of its many evils are taken into consideration, such as, "illumination, seconds, health, and buck-passing" between the day and night shifts.

Companies whose selling organization is geared to night work production could easily have other mills, now idle, manufacture for them on a commission basis as a temporary measure.

Our labor laws should be national. We would be better off today if a national 48-hour (or less) law had been in effect the last few years.

"CARDER"

Editor, Overseers' Round-Table:

LOOKING AT the question from where I sit, night work is one of the greatest evils in the textile industry and should be eliminated from every textile line in every state of the Union. Night work is the cause of overproduction and much of the suffering from unemployment.

The majority of mills have now agreed among themselves to discontinue working women and minors nights. As I see it, this will not help the situation, for, as soon as orders come in fast enough, the mill owners will work men nights and women and minors during the day. It appears to me that mill owners are trying to stave off the inevitable, which is sure to come sooner or later, namely, a national standard 45-hour-5-day-week, which is the only safe way to handle the problem. This would stabilize production and afford steady work for those who have not turned to rum running.

"A TEXTILE TOURIST"

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Summary of Discussion on Elimination of Night Work

Discussion of the elimination of night work in the textile industry brought out a clear-cut and fairly balanced difference of opinion. Of the contributions 44% were strongly in favor of elimination while 56% were just as strongly against elimination. No sectional lines were in evidence, replies in both groups coming from all sections. Taking into consideration the border-line cases, where a very slow elimination of night work was not condemned, it might be said that the vote was practically even. The principal argument of those favoring elimination was that overproduction would cease and of those opposing that unemployment would be greater. Several contributors advocated national laws governing hours of labor.

NEWS about MEN

B. R. ARMOUR, who was president of the Associated Dyeing & Printing Corp., Paterson, N. J., before it was reorganized into the Associated Dyeing & Printing Co., Inc., has been formally made president of the latter company. At the same time, E. H. RENIER, manager of the Colt Piece Dye Works, a unit of the Associated, was made vice-president, and JAMES A. WILEY, former secretary-treasurer of the old company, is now treasurer of the Associated Dyeing & Printing Co., Inc.

HENRY P. KENDALL, president, The Kendall Co., Boston, Mass., delivered an address before the Rotary Club of Charlotte, N. C., Nov. 4, in which he discussed the question of improving working conditions and raising the standard of living among textile workers.

PHILIP FAINER has resigned as president and director of Associated Textiles of Canada, with head office in Louiseville (Ont.) Can. JACKSON H. MARX has been elected to take his place.

HENRY T. G. DYSON, president and treasurer of the Hudson (Mass.) Worsted Co., has been appointed on the provisional committee of that town to handle the unemployment situation.

C. C. CRANFORD, president of Asheboro (N. C.) Hosiery Mills, has been appointed a member of the board of directors of the High Point unit of the North Carolina Bank & Trust Co.

COL. LEROY SPRINGS, of Lancaster, S. C., president of the Lancaster Cotton Mills and several other large textile plants in South Carolina, has donated to the Lancaster post of the American Legion 12 acres of land from his farm in the suburbs, on which to establish a permanent annual county fair.

J. F. CANNON of Wiscassett Mills Co., Albemarle, N. C., has been chosen president of the Concord (N. C.) Glider Club.

JAMES P. WHITTALL of the M. J. Whittall Associates, Ltd., Worcester, Mass., will speak on "Massachusetts and Its Future Airports" at the third annual meeting of the Massachusetts State Association of Selectmen at the Hotel Statler, Boston, on Nov. 15.

W. W. NEAL, president of Marion (N. C.) Knitting Mills, was elected member from McDowell County in the Legislature at the election recently. Mr. Neal has served several terms in the Legislature.

H. B. MCCORMAC, directing head of the Berkley Woolen Co., Martinsburg, W. Va., and general manager of the Virginia Woolen Co., Winchester, Va., has been elected director-general of the annual roll call for the American Red Cross.

WILLIAM A. GREEN, New Haven, Conn., engaged in the wool business, and RUTH STONE, also of that city, are to be married in New Haven, on Nov. 13. They will pass their honeymoon in Europe.

BERNARD M. CONE, of Greensboro, N. C., president of the Proximity Mfg. Co.; THURMOND CHATHAM, of Winston-Salem, president of the Chatham Mfg. Co.; FRANK E. LAYCOCK, of Swannanoa, N. C., superintendent of the Beacon Mfg. Co.; R. T. AMOS, High Point, N. C., of the Amos Hosiery Mills; LUTHER HODGES, of Spray, of the Carolina Cotton & Woolen Mills; O. E. KEARNS, of O. E. Kearns & Son, High Point, are members of the advisory committee of the state wide industrial conference, which met in High Point, N. C., Nov. 13-14.

PRESCOTT G. KENT, retired woolen manufacturer, formerly of Monson, Mass., and MRS. KENT, celebrated their 60th wedding anniversary at their home in Worcester, Mass., on Nov. 4.

Following directors for the ensuing year have been elected to South Texas Cotton Mills, Brenham, Texas: D. C. GIDDINGS, T. A. LOW, SAM RUBENSTEIN, W. B. FRANCIS, W. W. SEARCY, A. A. HACKER, WILLIAM SEIDEL, FRED W. MARTIN, T. A. ADAMS, all of Brenham, E. A. DUBOSE and H. H. ROGERS, of San Antonio, with the following officers: E. A. DUBOSE, active vice-president; D. C. GIDDINGS, treasurer, T. A. ADAMS, secretary and manager. H. H. ROGERS, president, asked that he be not re-elected, but election of a president was deferred until the next meeting of the directors.

Herbert K. Webb, reelected head of Philadelphia Wool and Textile Association.

H. WESTERSCHULTE, representative of the Deutsch-American Exporting & Importing Co., of Bremen, Germany, has been in Greenville, S. C., where he made heavy purchases of cotton from Greenville and nearby sections. He will return to Greenville once each year to purchase cotton for his firm.

JOHN C. DUGAN of J. A. Wade & Co., New York, was last week elected to membership in the New York Cotton Exchange.

EDWARD EARLE, of Mellor Bromley & Co., Ltd., textile machinery, Leicester, England, has been in this country on a brief business trip.

W. F. CARR, who has been vice-president and secretary of the Durham (N. C.) Hosiery Mills, has been elected first vice-president and secretary.

The following new assignments have been made by Russell Mfg. Co., Middletown, Conn., cotton beltings and brake linings, RALPH W. KIMBERLEY, Buffalo, N. Y., factory sales representative in Buffalo; HILMAR A. SAETRE, of Boise, Idaho, has been appointed to represent the company in the territory in and around Boise; A. J. DUMEER has been transferred from the New London, Conn., territory to Fall River, Mass.; and the following junior salesmen have been appointed: EDWARD LEJAMBE, of Toronto, Can., HENRY A. MYERS of Hamilton, Ont., and GEORGE E. SIMMONS, Middletown, Conn., for their respective districts.

ERNEST PATTON, assistant vice-president of the South Carolina National Bank, has been chosen secretary and treasurer of the Southern Bleachery & Print Works, Inc., Taylors, S. C. HARRY STEPHENSON is president of this company. Mr. Patton will enter upon his new duties at once.

JOHN F. TINSLEY, vice-president and general manager of the Crompton & Knowles Loom Works, Worcester, Mass., has returned from a month's European trip.

J. W. DOWNS, managing director of Downs, Coulter & Co., Ltd., textile manufacturers of Bradford, England, is now visiting Canada at the firm's selling office conducted in the New Caron Bldg., Montreal, by Paterson & Jones.

W. L. WARD, secretary and treasurer of the Leward Cotton Mills, Worthville, N. C., in the recent election was elected a member of the North Carolina General Assembly from Randolph County.

S. A. LOVELACE, of Elizabethton, Tenn., and NELSON H. HARTE, of Burlington, N. C., have gone to Hemp, N. C., to take charge of the silk mills at that place recently taken over by Spencer Love and associates of Burlington.

EDWIN G. NORMAN, secretary of the Cranska Thread Co., Worcester, Mass., was elected district attorney for Worcester County at the state election held on Nov. 4. He is the present incumbent by appointment of the Governor.

J. A. GROVES, treasurer of Wiscassett Mills Co., Albemarle, N. C., was elected to the North Carolina General Assembly as member from Stanly County in the recent election.

JOHN F. TINSLEY, vice-president and general manager of the Crompton & Knowles Loom Works and FRANK H. WILLARD, president of the Graton & Knight Co., both of Worcester, Mass., will speak on the unemployment situation at the conference of the New England Council to be held in Boston on Nov. 20.

E. KENT SWIFT, treasurer and general manager of the Whitin Machine Works, Whitinsville, Mass., has been elected a vice-president of the Whitinsville Savings Bank.

W. S. H. BAKER, vice-president of the Oneida Bleachery Corp., New York Mills, N. Y., is spending a month's vacation in the West Indies.

WALTER E. SCHUSTER, treasurer of the Schuster Woolen Co., and the Hayward Woolen Co., both of East Douglas, Mass., and also the Millbury (Mass.) Woolen Co., was re-elected without opposition to the Executive Council of Massachusetts at the state election held on Nov. 4.

GEORGE SANTEE has resigned as director of sales for the American Knitting Mills Co., Inc., effective Dec. 1. Mr. Santee was formerly sales manager for the West for Earl & Wilson and five years director of sales for the Varsity Underwear Co. He expects to become interested in sales reconstruction work.

LAWRENCE BRUMBY, general manager of the Porterdale (Ga.) Mills, has been transferred to the Macon office of Bibb Mfg. Co., where he will be in a similar capacity over several of the Bibb plants.

D. FRANK LORD, superintendent of construction for M. J. Whittall Associates, Ltd., of Worcester, Mass., at a meeting of the executive committee of the textile section of National Safety Council, presented the new chairman, E. E. PLACE, of Woburn, Mass., assistant superintendent of a Boston insurance company.

JAMES I. DOYLE, former traffic manager for Brewer & Co., Inc., Worcester, Mass., has been elected president and general manager of the Colonial Warehouse & Distributing Co., Worcester, a new corporation.

F. M. BRODIE has been promoted to the position as general manager of the Shuttleworth branch of the Mohawk Carpet Mills, Amsterdam, N. Y.

O. B. KIESEWETTER, who was recently appointed general manager of the Dominion Woolens & Worsteds, Ltd., Hespeler (Ont.), Can., has resigned. C. E. WHITTON, of Montreal, has been appointed acting manager, with JOHN CAMPBELL in charge of production and manufacturing operations.

A. STANLEY LLEWELLYN, manager of the Wateree plant of the Kendall Mills, Camden, S. C., was the chief speaker and honor guest at the annual banquet of the American Legion and Auxiliary held at Chester, S. C., Nov. 7. He is the newly elected commander of South Carolina.

G. C. SHAW, manager of the High Falls (N. C.) Cotton Mills and W. H. CURRIE, manager of the Bismark Hosiery Mills, Inc., Carthage, N. C., were elected members of the board of commissioners of Moore County, N. C., at the recent election.

OSCAR K. DIETRICH has resigned his position as superintendent of the Mayo Woolen Mills Co., Inc., Millbury, Mass., after eight years' service.

GEORGE GLENN has resigned as assistant superintendent of the Swift Spinning Mills, Columbus, Ga.

ERNEST A. KAISER of Asheville, N. C., identified with one of the units of the Martell chain of mills in that city, on Nov. 15, will assume the superintendency of

Floyd W. Jefferson, elected president of Textile Export Association of the United States

Irene Mills, controlled by the Wheat family, at Gaffney, S. C. He succeeds J. B. WRIGHT, for the last five years superintendent of the mill, who has resigned.

FRANK A. O'NEAL, superintendent of the Leicester (Mass.) Woolen Co., and MAY (FARROW) CAREY of that town, were married in Leicester, on Nov. 1. They will make their home in Worcester, Mass.

J. BRANDON MANNING, superintendent of the Felters Co., Millbury, Mass., has been elected president of the Kiwanis club of Millbury, and HARRY H. DAW, agent for the Wuskanut Mills, Inc., Farnumsville, Mass., vice-president.

R. H. NUTTALL has been appointed general superintendent of Eureka Printing Co., Clifton, N. J., controlled by Davis & Catterall. He succeeds HALSTEAD HEAPS, who recently became plant manager of the Rock Hill Printing & Finishing Co., of Rock Hill, S. C.

JOE LANIER recently resigned as assistant superintendent of the West Point Mfg. Co., Shawmut, Ala.

THEODORE BAKER of Lancaster, S. C., a graduate of the Textile Engineering School and chemistry division of Clemson College, S. C., who has been doing research work in the dyeing and knitting laboratory of the Du Pont Rayon Co. at Buffalo, N. Y., has tendered his resignation there and has accepted a position with the Kerr Finishing Co., Concord, N. C.

VERNON BULLARD has accepted a position with the Cannon Mills, Kannapolis, N. C. He was formerly with the Entwistle Mill, No. 2, Rockingham, N. C.

C. H. ALBREICHT recently resigned his position as paymaster and Y.M.C.A. director at the Whitmire (S. C.) plant of the Aragon-Baldwin Cotton Mills.

Obituary

Sidney M. Colgate

Sidney Morse Colgate, philanthropist and chairman of the board of the Colgate-Palmolive-Peet Co., makers of textile soaps among other lines died Nov. 10, at Oaks Park, his home, in Orange, N. J. Mr. Colgate, who was 68 years old, entered the family's soap business soon after he was graduated from Yale in 1885, and in 1925 was elected president of Colgate & Co., succeeding his brother, Gilbert Colgate, of New York. In 1928, when the company merged with the Palmolive-Peet organization, Mr. Colgate became chairman of the board.

James K. Norfleet

James Kirkpatrick Norfleet, 60 years old, died after a few hours illness, Nov. 1, at his home in Winston-Salem, N. C., and his wife, Mrs. Norfleet, who had been confined to her bed with a serious illness, died shortly after, her death being caused by the shock of Mr. Norfleet's demise. Mr. Norfleet was a director of the Washington Mills, with plants at Mayodan, N. C., and Fries, Va., a director of the Norfolk & Western Railway, and chairman of the executive committee of the board of directors of the Wachovia Bank and Trust Co.

Edwin J. Haskell

Edwin J. Haskell, formerly a silk manufacturer of Westbrook, Me., died Nov. 6 of a heart attack. Mr. Haskell was 78 years old and was born in Rockport, Mass. In 1872, with his father and brother he organized the Haskell Silk Mills at Westbrook; he was manager and superintendent for 50 years, until his retirement in 1922, when he was elected vice-president.

William Piez

William Piez, European representative of Link-Belt Co., and a brother of Charles Piez, chairman of the board of that company, died at Brussels, Belgium, Nov. 2 after a week's illness. Prior to his association with Link-Belt Co., Mr. Piez was district manager of the Concrete Steel Co., Chicago. Since 1928 he lived in Paris. He was born at Newark, N. J., in 1878.

Julian H. Taliaferro

Julian H. Taliaferro, vice-president, Springfield (Tenn.) Woolen Mills, Inc., died at his home Nov. 6 following a sudden heart attack. Mr. Taliaferro, who was 48 years of age, formerly held the position as president of Leaksville Woolen Mills, Charlotte and Spray, N. C., and moved to Tennessee about a year ago. He is survived by his parents, Mr. and Mrs. W. R. Taliaferro, Sr., of Charlotte; also his widow and two daughters.

Charles R. H. Warnock

Charles Raphael Hunter Warnock, president of the Galt (Ont.) Knitting Co., and well known in the Canadian textile trade, died recently at Galt. Mr. Warnock was born March 10, 1863; he entered the business with his father, founder of the Galt Knitting Co., and worked his way up to the presidency, which he has held since 1902. He is survived by his widow.

NEWS about MILLS

Cotton

Acme Weaving Mills, Inc., Anniston, Ala., have work in progress on an expansion and improvement program at their plant, and will install a battery of about 60 additional weaving machines and accessories. The work is reported to cost about $80,000.

Merrimack Mfg. Co., Huntsville, Ala., which has been operating its two cotton mills on short time during the last several months, this week began full-time operations both night and day, giving to every person who has been employed in the mill work of at least 55 hours a week. The day shift and the night shift will each week work 55 hours.

Columbus, Ga. Local mills continue to have curtailed schedules, while some have increased curtailment during the last 30 days. **Bibb Mfg. Co.** is running only two days a week; **Columbus Mfg. Co.** has a schedule of 40 to 45 hours; **Eagle & Phenix Mills** are operating three to four days; **Swift Mfg. Co.** is on a three and four day schedule. The hosiery mills are running about half time.

Royal River Mills, Inc., Yarmouth, Me., manufacturers of cotton bags, have resumed work after a six weeks' shutdown. There are 60 operatives and the weekly payroll is about $1,000.

Firestone Cotton Mills, Fall River, Mass., a subsidiary of the **Firestone Tire & Rubber Co.,** Akron, Ohio, have resumed production at their local plant on a full-time operating schedule, following a shutdown for a number of weeks.

Clark Thread Co., with headquarters in Newark, N. J., will build a large spinning plant in either Georgia or Alabama in the near future. Plans for the new plant call for a 40,000 spindle unit equipped with the most modern machinery for producing combed thread yarn 40s to 100s. It is also understood that the Clark company plans later to move part of its present equipment to the southern site. J. Stoney Drake, formerly superintendent of the Exposition Mills, Atlanta, but who for the last several years has been president of the Drake Corp. of Norfolk, makers of sizing compounds, is understood to have been appointed manager for the new Clark mill.

Hind & Harrison Plush Co., Clark Mills, N. Y., has received permission from the Public Service Commission to sell its power system and hydro-electric plant to the Utica (N. Y.) Electric Power Co. for $45,000.

Erwin Cotton Mills Co., Cooleemee, N. C., has for the last two weeks been operating full-time and will continue on this schedule for an indefinite period.

Gem Yarn Mills, Cornelius, N. C., are now operating on a full-time day and night schedule, after some curtailment.

*Indicates previous mention of project.

Chatham Mfg. Co., Elkin, N. C., is increasing production at its local mill and has placed a night shift in service, in addition to regular day force, the advanced schedule to continue for an indefinite period.

Mansfield Mills, Inc., Lumberton, N. C., are having their carding department overhauled by J. W. Moore, of Concord, N. C.

Gossett Mills, Anderson, S. C., recently filed an amendment to their corporate charter increasing the authorized capital stock to $6,000,000, according to a report from the South Carolina secretary of state. The following plants are operated by Gossett Mills: **Williamston (S. C.) Mills, Toxaway Mills, Riverside Mfg. Co., Ladlassie Mills** and the **Gossett Dyeing & Finishing Co.,** operating a total of 112,645 spindles and 1,760 looms.

Bowling Green (S. C.) Spinning Mills and the **Blacksburg (S. C.) Spinning Mills,** two spinning plants of 5,000 spindles each, which were offered at auction Nov. 4 by Carl H. Hart, trustee in receivership, were not sold owing to lack of bidders. Not a bid was submitted in either case.

Brandon Corp. plants, **Woodside Cotton Mills Co., Victor-Monaghan Co.,** and **Easley Cotton Mills,** representing a total of approximately 544,000 spindles and 13,800 looms, have returned to a full day-time schedule, with no night operation, and it has been announced that this schedule will be continued as long as market conditions justify. **F. W. Poe Mfg. Co.,** Greenville, S. C., has also returned to a full 55-hour week, day shift only. The latter company operates 70,352 spindles and 1,700 looms.

Dunean Mills, Greenville, S. C., recently installed four additional double-deck Sipp-Eastwood winders with the new oilless bearings, purchased through Carolina Specialty Co., Charlotte, N. C.

Orange Cotton Mills, Orangeburg, S. C., manufacturers of rope, twine, etc., are now operating on a five-day schedule per week, after several months on a four-day program.

Monarch Mills, Union, S. C., which have been operating three days a week, have just begun to operate on a 50-hour schedule. **Union-Buffalo Mills Co., Inc.,** went on a four-day-week basis a few days ago.

Newberry (S. C.) Cotton Mills, are continuing on a full-time production schedule with day and night forces, and will hold to this basis for an indefinite time.

Gonzales (Tex) Cotton Mill Co., after being closed down for a few weeks, started operation again on Nov. 10. The mill employs about 150 hands.

***Granby (Que.) Can. Esmond (R. I.) Mills** have decided to open a branch plant in this city within the near future. The company will for the present lease a plant where a full line of the firm's cotton and woolen blankets will be manufactured.

Wool

Millbrook Woolen Mills, Inc., Yantic, Conn., filed organization papers at Hartford during the week. The company has a paid in capital of $130,000 and lists the following officers: President and treasurer, Emmanuel Kaplan, New York; secretary, Charles V. Jones, Norwich, Conn.,; asst. treasurer, Samuel C. Deane, Norwich; assistant secretary, J. L. Schwartz, New York. This company has purchased the **Yantic Mills** of the **American Woolen Co.** for about $150,000, and plans to begin operations before Jan. 1.

Bower Mill, Lewiston, Me., woolen blankets, is running on a capacity six-day week schedule, with day and night working forces, and will continue on that basis for an indefinite period. A full working quota is employed.

George's River Mills, Warren, Me., which have been idle since last April, will resume manufacturing operations at once, according to an announcement made by George W. Walker, former manager. Samples of all wool suitings will be made up and placed on the market together with samples of cheviots for men's wear. About 100 operatives will be employed.

Wyandotte Worsted Co., Waterville, Me., is said to be arranging for an increase in the working hours at the mill, adding about six hours weekly. A reduction in wages will be carried out both with day and night forces.

Byfield (Mass.) Woolen Co. has suspended production permanently and the plant will be closed. Machinery will be removed at an early date by the American Felt Co., Boston, which recently arranged for the purchase.

Assabet Mills of the **American Woolen Co.,** Maynard, Mass., will shut down indefinitely about Nov. 20. A general conference between the union employees and officials of the mills is to be held to determine the future course. Since the first of the year operations have been falling off, until recently the mills have been operating at about 20%, with about 400 of the 700 looms running.

E. G. Carlton & Sons, Rochdale, Mass., white flannels, which resumed operations on full-time on Nov. 3 after several months' shutdown, have made a general 12½% wage reduction, effective on Nov. 3.

M. J. Whittall Associates, Ltd., Worcester, Mass., on Nov. 2, completed erection of their new power house, built of brick and reinforced concrete, covering an area of 110x85 ft. The plant will have a capacity of 150,000 lb. of steam per hour and will generate all the steam required for heating and process work

of the various mills. Francis J. Sill, Westboro, Mass., the architect and chief engineer, is in charge of operations of the new power plant.

Sargent Textile Co., Worcester, Mass., incorporated on Oct. 24 with 500 shares of no par stock to manufacture mohair and worsted yarns, has organized by the election of the following temporary officers and directors: President, Harold H. Hartwell; treasurer and general manager, George Stanley Whittemore; clerk, Isabelle A. Ewart. The company is already operating at capacity, day and night in the former plant of the **Queensbury Mills,** Gold St. More than 2,000 of the 4,000 spindle equipment of the plant are in operation and the balance will be running as soon as they can be erected and put in condition. The spindles are part of the equipment of the Queensbury Mills, which suspended operations last year. Additional floor space has been taken over by the company.

Lockport (N. Y.) Felt Co., awarded contract to W. B. Eaton Co., Lockport, for erection of a one-story addition to its weave shop in Newfane, N. Y. The new structure, to be of fireproof construction, will be 80x160 ft. in size and equipped with broad looms for weaving felt of exceptional width. Close to $100,000 will be expended. William H. Lee is secretary and general manager.

Beaver Worsted Mills, Philadelphia, Pa., Adams and Leiper Sts., have been organized to manufacture men's worsted suitings.

***Barrymore Seamless Wiltons, Inc.,** Philadelphia, Pa., have asked bids on general contract for an addition to recently acquired plant at Stamford, Conn., to be equipped as weave shed, reported to cost over $200,000, with equipment. Jean Paul Richter, 12th & Chestnut Sts., Philadelphia, and Ballinger Co., same address, are architects and engineers. It was erroneously reported in our issue of last week that Belanger Co. made the plans.

St. Johns (Que.) Can. Textile Mills, Ltd., have been organized to take over the plant and equipment of **Demetre, Sault & Ciriez (Canada) Ltd.** The line of women's wear serges which in the past comprised the firm's complete production will be discontinued and the entire production capacity confined to men's wear serges and suitings. J. H. Panneton, who has been managing director of the Demetre, Sault & Ciriez, has retired. Col. W. B. Evans, of Evans & Evans, Montreal, has been appointed vice-president and manager. Andre Ciriez is president of the company and Andre Sault is secretary-treasurer.

Knit

Star (N. C.) Hosiery Mills, owned by M. C. Holderfield, was recently organized and began operation with 25 Scott & Williams knitting machines and nine loopers. Dyeing and finishing equipment has also been installed. B. B. Hogan was recently appointed secretary and treasurer and C. F. Cline is plant superintendent.

Stimpson Hosiery Mills, Inc., Statesville, N. C., have begun operations with eight leggers and two footers, 42-gauge Reading machines, 20 section leggers and 28 section footers. Night and day shift operation are reported.

Crescent Knitting Mills, Brooklyn, N. Y., have leased 10,000 sq.ft. at 328-350 Boerum St., Brooklyn, where new machinery will be added to the present equipment, thereby doubling production. The firm manufactures men's and boys' sweaters and sweater coats.

Williams Bros. Mfg. Co., Rome, N. Y., men's cotton and silk balbriggan underwear, is now running on full-time schedules with additional workers.

Walnott Knitting Co., Utica, N. Y., is maintaining near capacity schedules with a normal force.

Waterville (N. Y.) Textile Mills, Inc., men's ribbed underwear and sweaters, are now operating near capacity with a normal working force.

Gem Hosiery Co., Philadelphia, Pa., will hold liquidation sale of machinery and equipment on the premises at 3rd & Cumberland Sts., at 10 a.m., Nov. 18. Samuel T. Freeman & Co. are auctioneers.

Penn-Victor Hose Co., Reading, Pa., has purchased 24 Banner knitting machines, for the production of better grade half hose, according to Irvin B. Binkley, president and superintendent.

Minaret Mills, Inc., Chattanooga, Tenn., incorporated for $25,000, have been chartered for the manufacture of hosiery. W. C. Henderson is president and treasurer, Lyle Stovall, vice-president, and Clarence Kolwyck, secretary.

Sweetwater (Tenn.) Hosiery Mills, manufacturers of men's fancy and plain hose, are operating 185 knitting machines at full capacity.

Phoenix Hosiery Co., Milwaukee, Wis. A wage reduction of 14½% affecting full-fashioned hosiery knitters has been accepted by the employees. A new wage scale will be negotiated between the **Holeproof Hosiery Co.** and its full-fashioned hosiery knitters, to supplement the present agreement, which expires Nov. 17.

Newlands & Co., Ltd., Galt (Ont.) Can., have placed orders with Prince-Smith Co., for additional worsted yarn spinning machinery for the production of finer counts of worsted knitting and weaving yarns, 30s to 50s.

Silk

Corticelli Silk Co., New London, Conn., and Florence, Mass., silk thread manufacturer, has entered the cotton thread field and is now producing a new line of cotton sewing thread including mercerized in colors and six-cord in black and white at competitive prices.

Pinehurst Silk Mills, Hemp, N. C., have been purchased by Spencer Love and associates, of Burlington. The new owners will increase the capacity of the mill, which at present is 100 machines, and will thereby increase the force of workers by about two-thirds.

Columbia, Pa. Employment for 80 men and women will be given when the Faey Silk Co., Paterson, N. J., opens its new plant here in the near future. The company has taken over the old Follmer Clogg & Co. plant, Third and Union Sts. Workmen last week began the installation of 120 looms which will be placed in operation as rapidly as possible.

Klots Throwing Co., Keyser, W. Va., is planning to develop an increased schedule at its local mill and will make additions to the working force.

***Western Canadian Silks, Ltd.,** Port Moody, B. C., near Vancouver, a new organization backed by English and Canadian interests, expects to be in production within a few months. The company is capitalized at $1,000,000 and Stuart S. Tufts, barrister, of 305 Stock Exchange Building, Vancouver, is one of the active promoters. A. H. Alexander, retired merchant and mayor of Port Moody, B. C., is president.

Finishing

Lowell, Mass. The board of directors of the **National Fabric & Finishing Co.** has authorized the sale of the machinery of the **Lowell Bleachery** at public auction at 10 a.m., Nov. 24. The sale will include machinery of all kinds, including that for bleaching and the development of power.

Fabrics Finishing Co., Paterson, N. J. C. S. Adams, Carlyle Garrison and John F. Evans, receivers, have made application to the Federal Court for permission to offer property of company for sale at a public auction, including six mills, two being located at Paterson, and one each at West New York, Fairlawn, Andover and Newton, N. J.

Keystone Piece Dye Works, Paterson, N. J., have awarded a general contract to H. W. Stam, Inc., 5 Colt St., Paterson, for a one-story addition to dye house on East 43rd St., 48x56 ft., to cost about $13,000, with equipment.

***Southern Bleachery & Print Works, Inc.,** Taylors, S. C., have received four carloads of equipment from the **Rockland Finishing Co.,** Garnerville, N. Y., which will be installed, according to an announcement made by H. R. Stephenson, president. It was pointed out that other machinery also will be brought from New York and the capacity of the plant will be doubled. A new office building is being erected and the space now in use as an office will be given over to the engraving department of the enlarged company.

***Ray-Ser Dyeing Co.,** Chattanooga, Tenn., is progressing well with the installation of twisting machinery for the production of ply rayon yarns and combination yarns of rayon, silk, cotton, acetate and worsted, it has been announced. The floor space of the plant was enlarged so as to double the space. It has also been announced that additional winders will soon be installed.

Novelty Textile Printing Works, Toronto (Ont.) Can., producers of printed textile products, have leased 11,000 sq.ft. of floor space at the corner of Simcoe & Pearl Sts., Toronto. The equipment at present in their former College St. establishment will be moved to the new building as rapidly as possible.

*Indicates previous mention of project.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.—EDITOR.

Warpwise Streaks in Silk Cloth

Technical Editor:

Enclosed you will find sample of finished silk from a warp of 14,500 ends in a 58 reed with 64 picks. You will note also streaks which are warpwise, the cause of our trouble. There are 60 pieces of this construction, of which 55 pieces were dyed in various colors. The remaining five pieces were dyed peach as per sample. Of the five pieces mentioned, three came from one warp, one piece from another warp from the same mill, and one from a warp made in another mill.

The streaks appear only in the peach, while all the other pieces are apparently perfect. (7361)

The sample submitted shows two different types of streaks running warpwise. One type is due to uneven warp stock, and this undoubtedly is the streak mentioned in your letter. The uneven warp stock will not show up to a great extent in some colors, while the defect is plainly seen in other shades. A sample of the piece apparently without this defect off the next cut would show the same defect if closely examined.

Another type of streak showing in this sample is caused by reed marks. Reed marks show up very distinctly and undoubtedly are caused by sprung dents.

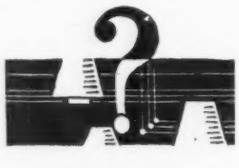
One method of overcoming the uneven warp-stock streaks to a small margin is by spotting bobbins across the creel, instead of up and down. Even though a five-bale lot is the same chop, every book will have a variation in thread size; and by spotting in this manner, the uneven size will not show so readily. This trouble may also be minimized by the use of carefully selected dyestuffs.

◆

Tying Knots in Grenadine

Technical Editor:

I am very much interested in obtaining information about the general methods used in knot tying on the grenadine twist in the second or last spinning operation. Are the ends placed on the bobbin without tying so they can be found and tied with a weaver's knot at the coning operation? Which is the most satisfactory method employed by experienced throwsters in the grenadine numbers? (7356)



The most satisfactory method depends on individual equipment. One of the most efficient methods consists of spinning the full first-time twist about 35 turns at 12,500 r.p.m., using a flat, coiled tension wire. Use a loose-pin take-up bobbin that is rustless. Steam five minutes. Equip the take-up rolls with cranks to move them until the spindles stop, so as to prevent the kinks forming when shutting down the machines. Operate 124 hours per week without stop. Double on 5B's with about three turns, using a taper-hole 5B bobbin that will fit on second-time spinners. Transfer the three-turn bobbins to the spinners and add the rest of the twist, about 27 turns, at 12,500 r.p.m., without flyers, using a right-coil tension wire. Tie no knots and depend on the cone winder's tying a double weaver's knot. Use a rustless take-up bobbin and steam twice five minutes with an interval of ten minutes between steamings. A number of throwsters use the wet process; that is, dip and soak the bobbins in water containing a weak emulsion for one hour and then dry them in a drying room.

◆

Finishing Alpaca

Technical Editor:

Enclosed you will find two samples of cloth. I should like a little information about finishing them. I want a curled finish. Could you tell me what processes the goods go through and the machinery that is used? (7363)

Just what you are expecting to get on a curled finish is not quite plain, although we presume you may be referring to a lamb's-wool effect. Scouring in an open kettle will give some form of a curl. Care must be taken not to have the bath so hot as to felt the face enough to cause a matty appearance. The temperature of the bath should not be over 80 to 90° F. Since the amount of curl will be determined by the amount of time the goods are in the liquor, the time must be taken into consideration by the man in charge. When curl has developed and washing off has been completed, a good beating on the back will help to bring the curl to its fullness. After beating, drying will be necessary. Dry cropping and steam tentering will add to the finish. We are returning a small sample scoured by hand, which shows a tendency to curl or show a lamb's-wool effect.

◆

Holes in Stockings

Technical Editor:

We are enclosing three stockings, and shall appreciate your opinion as to the possible cause of the holes which have developed in the legs. These holes evidently do not show at the time they are boarded, and do not break out until after they are on the counters of our customers. You will notice that none of these stockings have been worn. We have found quite a number of these holes in our stockings at various times, and are at a loss to know just what the cause could be. (7357)

We have examined the samples of hosiery and are of the opinion that the holes are not what are termed "manufactured

holes" so far as such holes are associated with knitting, dyeing, and boarding.

Our first thought on the question was that the holes had been caused by some sharp instrument pricking the stockings. This may or may not be the fault of the manufacturer. This conviction was further confirmed when we found that one stocking was punctured clear through, showing holes on both sides of stocking agreeing in position. This indicates that whatever caused the trouble pierced entirely through the stocking. It is the practice in many finishing rooms to handle the goods with trays. These trays are generally made of wood, and are oftentimes not as carefully finished as they should be, with the result that nail points or screw points sometimes protrude on the under-sides. When one tray of goods is stacked on top of another, the sharp protrusions damage the hosiery. This is a possible cause of the trouble.

On the counters of retail stores, metal trays or baskets are often used for displaying hosiery. We have known these trays to be carelessly placed or dropped on hosiery lying on the counter or table, and have seen pulls and holes caused in this manner. The samples you submitted are rather loosely knit, and such fabric will lend itself favorably to pulling and cutting. We note in addition to the holes there are several pulled threads.

If a heavy, pointed object—such as a pair of scissors, a screw-driver, or a paper-tape vender—is allowed to strike the hosiery, this type of hole will result. Somewhat similar defects are caused if the boarder wears a heavy ring which hits the fabric against the metallic board. If this possibility can be eliminated, you can be practically certain that the holes were made after boarding was completed.

It is only possible to give these opinions as to the probable cause of the trouble; but we are quite sure that, if a careful check-up is made on how the goods have been handled, the exact reason may be determined.

◆

Difference in Shade in Grenadine Stockings

Technical Editor:

We are enclosing herewith a pair of four-thread grenadine stockings, 2x2. In examining these stockings, you will notice certain shadings. Will you please make a thorough analysis of this and advise us whether this is due to faulty throwing, dyeing, or knitting? Any other suggestions as to the possibilities of this trouble will be appreciated. (7358)

We have carefully examined the samples submitted and do not believe that the trouble is necessarily due to faulty throwing, dyeing, or knitting. It is most certainly not caused by faulty dyeing, but is a trouble that might be charged to the throwster or to the knitter. If the knitter is buying thrown silk from different throwsters, he may as well reconcile himself to such trouble and take it as a matter of course. If he is, however, having his throwing done by a commission throwster, and the throwster will co-operate to the fullest extent by giving full information regarding different lots of silk, and if the knitter takes due notice of such advice, the trouble may be reduced to a satisfactory minimum.

It is well known that there is much difference in the character of different lots of silk, even though of the same grade and quality; and, in changing from one lot to another, it is highly important to finish up one lot of silk as far as possible before starting on another, both from a throwing and a knitting standpoint. If legs are made from one lot of silk and feet from another, trouble may be expected; and if a different lot of silk is introduced to the legger in the middle of the legs, trouble may again be expected. The samples indicate that this has been done. We note a wide difference between the foot and the leg of one stocking, and we believe this to be caused by different lots of silk being employed and the color difference being further augmented by different stitch construction. The leg fabric indicates that it was made on a different type of machine than the foot, the fabric of the foot being of much better quality.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

◆

Spinning Angora Rabbit Wool for Hand Knitting

Technical Editor:

I read with considerable interest in your issue of September 20th an article on Angora rabbit wool, and I should like to find out what system of spinning is used on this stock to get the effect wanted on hand-knitting yarn where the fibers are thrown out. It would seem that it is possibly the dry-spun system using frames for spinning. (7355)

We have referred your inquiry to the author of the article which interested you, and he replies as follows: "Ring frames of the continental type, such as are built in the United States, are suitable for spinning angora rabbit wool prepared in porcupine drawings for the purpose which your inquirer has in mind. The speed should not exceed 4,000 r.p.m."

We have likewise referred your inquiry to an experienced American worsted spinner, who obligingly offers the following suggestions:

"These yarns are processed on the woolen and the worsted systems. A mule-spun woolen yarn would be more rough—have more beard—than a ring-spun yarn.

"If a worsted yarn is required, there is a choice of the two systems, the Bradford and the French. The procedure regarding the processing of these yarns using the French system was fully explained in the September 20, 1930 issue of TEXTILE WORLD, in a special article on "Angora Rabbit Wool—Its conversion into yarn," pp. 34 and 35. In it

the author stresses the use of continental ring frames—really frames specially designed for French yarns, having small diameter front rolls and a greater inclination of the rolls.

"For the production of a beardy yarn, the Bradford system is ideal, and some men believe that Angora rabbit wool can be handled successfully on this system. If we were experimenting with this fiber, our procedure would be as follows:

"Staple the wool and rabbit wool tops, for this material is generally blended with wool, owing to its scarcity. Analyze the staple on a velvet board and from this analysis determine the drafts and ratches to use. Draft to suit the average staple. The ratches should agree with the maximum staple.

"Intersecting gilling, if possible, should be used. Failing that, one might employ fine ordinary gills with 2-in. diameter rolls and $\frac{3}{8}$-in. pitch screws, with pinning suitable for $\frac{1}{2}$ blood and drafts much lower than those possible using intersecting gills—one less than maximum staple, at least.

"Follow usual judgment regarding draft and ratch for the drawing boxes, but keep the flyer speeds down and avoid hard twists. Keep the operations down to a minimum and run a single end behind the rover, if the roving proves even enough. The cone system would be better on the fine end, if beard were excessive otherwise.

"Use five rovers for spinning the very coarse yarns—flyer spinning and cap frames for the finer counts. Some prefer flyer frames, but we do not see much advantage in them unless the beard is excessive. Very low speeds are not possible on the average cap frame, due to winding tensions—there is not enough 'drag.' A speed of 4500 to 4800 r.p.m. for bobbins is suggested for trial on cap frames, using $2\frac{1}{8}$-in. caps and 6- or 7-in. bobbins. Ring frames, if used, would give a smoother yarn, even at higher speeds, and a longer bobbin could be used. Mohair yarns are cap spun and Angora-rabbit-wool yarns are similar with regard to smoothness and luster.

"There can be no doubt that the Bradford system of drawing and spinning will produce a yarn with more beard than a similar yarn processed on the French system."

◆

Finishing Cotton Men's Wear

Technical Editor:

I appreciate the information you gave me on finishing cotton-worsted suiting and I have been wondering if this will apply to a cotton fabric. Let me have all the information on the cotton-fabric finishing you can. *(7362)*

Cotton men's wear may be processed either in the flat or rope form. The former method is more satisfactory, although there is more softening in handling in the rope form. To prepare for the continuous process, it will be necessary to sew the pieces in a continuous string, say in sets of eight, and then take the pieces to a machine of the squeezer type, or continuous crab. The first bath is made up with sufficient soap to break the water; that is to thoroughly soften the water. The second, third, and fourth bowls may be heated to about 100° F., the last bath being cold. Each of these bowls is furnished with a pair of squeeze rolls which will take the place of extracting. After passing through this machine, the goods are ready for the dryer.

The second method may be carried out in the rope washer, using a neutral soap or a fair grade of sulfonated oil. The goods are scoured in the same way as a worsted fabric, and are extracted and dried in the usual manner. Shearing is not necessary, but a good breaking up on a steam brush is advisable. Pressing is done in accordance with the colors employed.

◆

Calculating Breaking Strength of Cotton Yarn

Technical Editor:

In the article entitled "Miscellaneous Calculations of Use to Cotton Mills" by H. D. Martin, published in your issue of Oct. 11, we do not fully understand the third paragraph and the first example for cotton $\frac{7}{8}$-in. carded. Following the rule given in the third paragraph, we are of the opinion that for a 35s cotton $\frac{7}{8}$-in. carded yarn the second minus sign in the numerator should be changed to a plus sign. *(7385)*

The formula as used in the example is correct, but there is an error in the explanation given in the third paragraph, which accounts for the inconsistency. The first sentence of this paragraph should read "One per cent is deducted for each number above 28s, and one per cent is added for each number below 28s." On the behalf of Mr. Martin and ourselves, we thank you for calling attention to this error.

◆

Uneven Yarn in Knit Goods

Technical Editor:

We are submitting a sample of knitted cloth for your inspection and would appreciate your opinion regarding the yarn used. The knitting mill is of the opinion that the yarn is uneven. *(7365)*

An analysis of this sample and an examination of the yarn shows that the yarn is uneven and may be responsible for some of the trouble shown.

However, we also find that out of the six feeds, one is drawing a longer stitch than the others. This is not just at one place, but consistently. Raveling the yarns from a given length of fabric gave the following figures:

	Lengths		
Feed	*First Test*	*Second Test*	*Third Test*
1	36.5	36.0	36.5
2	36.5	36.0	36.5
3	38.0	38.0	38.5
4	35.5	35.0	35.0
5	35.5	35.5	35.0
6	36.5	37.0	36.0

These show that feed number 3 has a longer stitch than the others. Doubtless one of these troubles aggravates the other.

◆

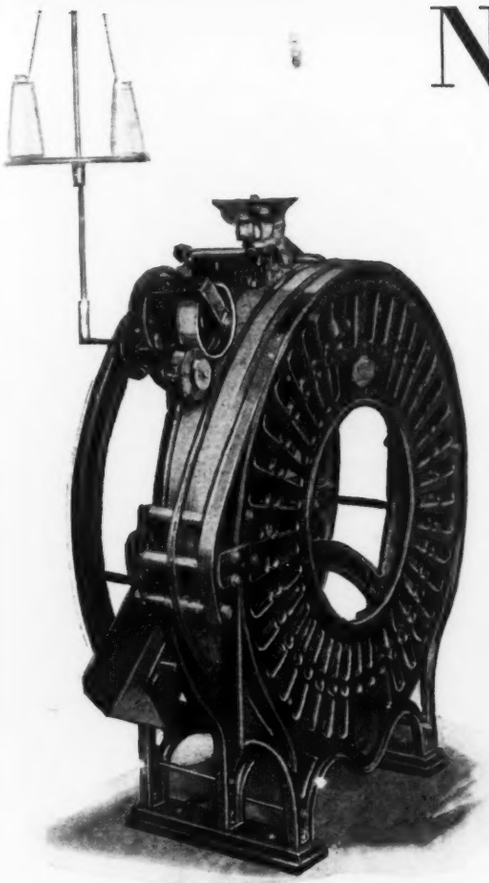
Inquiry for Yarn Supply

Editor, TEXTILE WORLD:

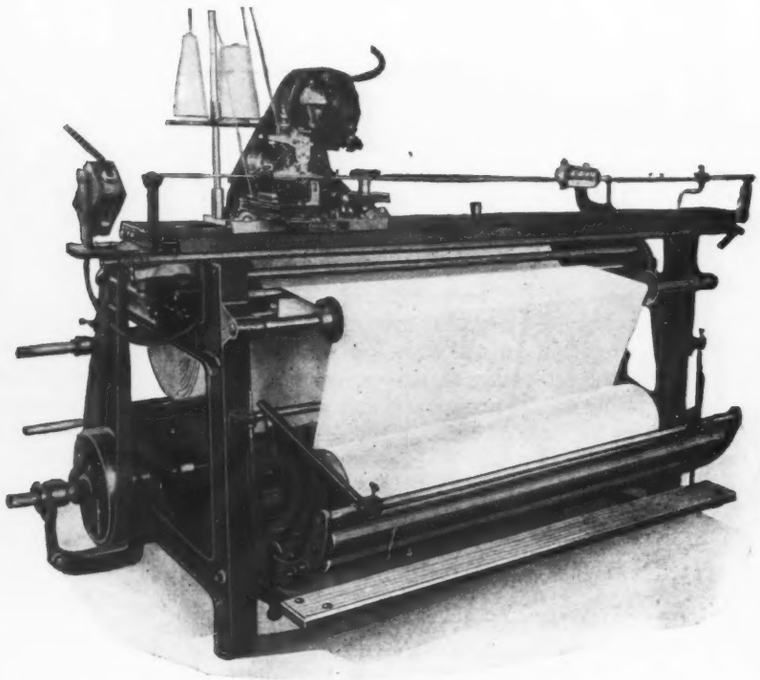
Can you put me in direct touch with spinners of 2s to 14s part waste or tinged cotton yarns, single, double and three-ply, on tubes and cones? BUYER.

[Spinners who are interested may get in touch with this inquirer by addressing: Editor, TEXTILE WORLD, 10th Ave. and 36th St., New York.]

New Machinery & Processes



Rotary sewing, trimming, and marking machine equipped with Merrow butted-seaming sewing head



Merrow butted-seaming sewing head applied to opening, sewing and re-rolling machine

Merrow Butted-Seaming Sewing Head

ANNOUNCEMENT of an improved line of butted-seaming machines equipped with a new Merrow sewing head has been made recently by Dinsmore Mfg. Co., Salem, Mass. An important feature of the new head is that it can be applied to the established line of Dinsmore machines, including those machines already in use. Among the various types of equipment to which this improved device may be applied are included railway machines; opening, sewing, and re-rolling machines; rotary machines; and the Rayer and Lincoln rotary sewing, trimming, and marking machine.

A good example of the application of the new sewing head is to the rotary sewing, trimming, and marking machine. This machine, which is also fitted with an improved stripping attachment, sews a flat-butted seam, trims the goods evenly with a narrow margin, and automatically marks each piece as sewing is completed. The latest model is equipped with an arrangement for removing cloth trimmings so that they are out of the way of the operator. Machine-cut gears are used throughout; and the machine is supplied with or without direct motor drive as required.

Another machine, Style 60ABB, is provided with trimming devices for cutting off the waste edges of the goods simultaneously with and just in advance of the stitching operation; and is especially adapted to make a strong, flat-butt seam on cotton, silk, or other piece goods, in either the wet or dry condition. The opening, sewing, and re-rolling machine (railway type) is built to accommodate goods in any width, weight, or thickness.

The motor-driven rotary machine fitted with butted-seaming Merrow head sews goods of any width and automatically strips goods from the cloth wheel. It is particularly adapted for sewing a flat-butted elastic seam.

Card-Clothing Foundation

CARD-Clothing foundation of an improved design has been placed on the market recently by Howard Bros. Mfg. Co., 44 Vine St., Worcester, Mass. The most important difference between this foundation and the type commonly used is in the ply of linen which has a cotton warp. This construction has been adopted to support the teeth and to give greater tensile strength than is possible with fabric foundations formed by a series of linen cords extending lengthwise of the fabric and secured side by side by cementing the cords together. Advantages claimed for this foundation are that it resists stretching while on the card, firmly supports the wire, and eliminates redrawing of cylinder and doffer fillets. All of these advantages are said to contribute to longer life, and smoother, lower-cost carding.

Raw-Silk Cleaner Bracket

W. J. KLOTS RAW SILK CLEANER CO., whose sales agents are Lavigne & Suter, 200 Fifth Ave., New York, and Universal Winding Co., Providence, R.I., has put on the market a one-piece rod bracket to attach its

Automatic-control pyrometer

Bracket for raw-silk cleaner

raw-silk cleaner plates to textile machines. The bracket is made in a one-piece die casting, No. 114 zinc mixture. The casting is then electro copper plated and finished with black Duco, baked on. Brackets are fastened by the open off-center grip to a $\frac{3}{8}$-in. rod, running the length of the machine, and thus allowing an adjustment both vertical and horizontal by a half-turn of a small set screw. Each bracket can be removed without disturbing any other parts of the machines. The bracket is well balanced and is designed to meet prevailing mill conditions.

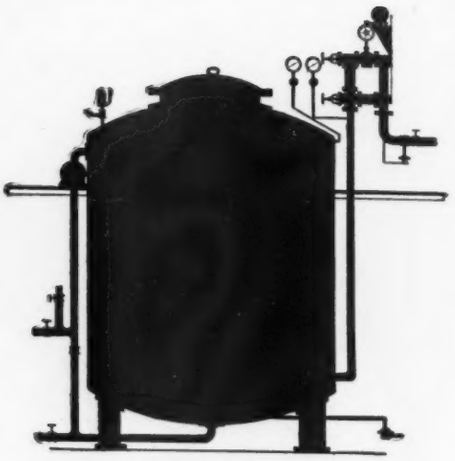
Indicating Pyrometer Controller

DEVELOPMENT of a new indicating pyrometer controller, known as Model 801, is announced by the Brown Instrument Co., Philadelphia, Pa. The device can be supplied as an automatic-control pyrometer, resistance thermometer, tachometer, or CO_2 meter. The control mechanism of the indicating pyrometer controller combines the basic principle of the Brown automatic control-recorder, with the new features of mercury contacts for breaking high currents.

Readings are observed directly on a 6-in. scale which has an index for setting to exact control point. The control point is instantly and easily adjustable. To prevent danger when used in the presence of explosive or inflammable gases, all wiring terminals and the motor are enclosed. Mercury switches up to 30 amperes capacity, eliminate the necessity of relay equipment; and since make-and-break occurs in sealed glass tube, there is no danger of a spark causing explosion. In addition, the instrument has high internal resistance to insure accuracy; and an automatic internal-compensation device which eliminates cold-junction errors when instrument is supplied as a pyrometer.

Kier with Pump and Percolator Circulation

FOLLOWING its acquisition of the business of Jefferson Kiers, Inc., which was reported in the April 12 issue of TEXTILE WORLD, Rodney Hunt Machine Co., Orange, Mass., is now announcing the Hunt-Jefferson Kier with pump and percolator circulation. This new kier is suited for general use and is well adapted to peroxide bleaching. It is stated that with this pump and percolator circulation even boiling is assured, the bottom third or quarter of the load being as thoroughly bottomed as the top portions.



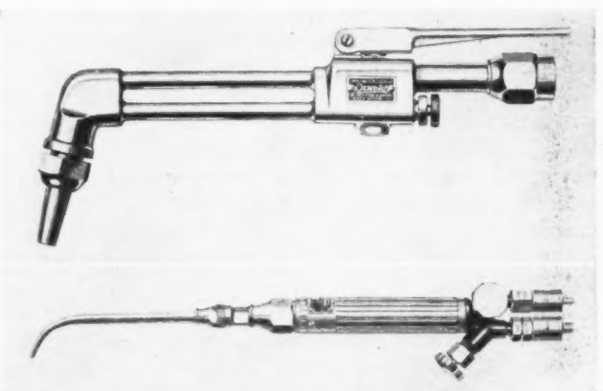
Improved kier with new type of circulating system

The kier is so designed that either pump or percolating system of circulation may be used separately, or both can be used in combination. A unique design and placement of the heating unit is utilized to effect substantial savings in steam consumption; and a new type of circulation system which takes advantage of the thermo-siphon principle is employed to give uniform penetration of the material and thus permit the boil to be completed in a much shorter time than usual. As in the case of other Hunt-Jefferson kiers, circulation is positively timed.

Attachments for Welding Blowpipe

TWO new accessories for the Type W-17 welding blowpipe have been introduced recently by Oxweld Acetylene Co., 30 East 42nd St., New York. These innovations, a cutting attachment and an adapter, are designed to make the blowpipe capable of doing almost any type of work which may be required of an oxy-acetylene blowpipe.

The cutting attachment is said to differ radically from any such attachment which has previously been manufactured, and enables the blowpipe to do a reasonably wide range of cutting work. A long handle is used for operating the cutting oxygen valve. When this handle is not in use, it can be pulled forward parallel to the tubes so that the whole attachment may be carried around in the operator's pocket. The injector for the heating flames is contained in the attachment, just as



Above: Cutting attachment for welding blowpipe. Below: Adapter

the injectors are contained in the welding heads. At the rear of the attachment near the bottom is an adjusting screw, which permits the oxygen for the heating flames to be regulated by the operator's thumb and forefinger while the blowpipe is in operation.

The adaptor makes it possible to use any of the welding heads available for the W-15 sheet-metal welding blowpipe with the Type W-17 welding-blowpipe handle. This allows the blowpipe to be used on work ranging from the lightest type of welding to the heavy general welding work required of such equipment. The adaptor contains passages for the oxygen and acetylene which fit tightly against the passages in the blowpipe handle.

Instrument Current Transformer

COMPENSATING features which, it is stated, practically eliminate ratio and phase-angle errors are embodied in a new type of instrument current transformer announced recently by the General Electric Co., Schenectady, N. Y. The new transformer, which bears the designation WF-1, is built in ratings from 5 to 800 amperes and is constructed for 5,000-volt operation. It is designed particularly for use in connecting watt-hour meters, instruments, and relays, the combined burden of

Current transformer designed to eliminate ratio and phase-angle errors

which does not exceed 50 volt-amperes. It has practically straight-line accuracy down to 5% load. The new transformer supersedes the Model WC-12, with which it is interchangeable as to dimensions. It is arranged for either flat-surface or pipe mounting, with a base which affords easy accessibility. Two-bolt-hole terminals are employed on this new transformer.

Aluminum Welding Rod

FOR welding aluminum sheet or castings when the metal is held tightly in jigs, and is not free to move, Oxweld Acetylene Co., 30 East 42nd St., New York, has introduced a new welding rod, designated as No. 23 aluminum rod. At temperatures just below their melting point, aluminum casting alloys possess very little strength and have a high contraction coefficient. Under certain conditions the combined effect of these two properties may cause cracks to occur adjacent to welds. The new welding rod is recommended for welding these alloys, because of the fact that its melting point is lower than that of the metal being welded, so that it will remain in the molten state after the base metal has solidified. Therefore the weld metal will fill in any voids which may have been created by the solidification and contraction of the base metal. Any stresses which might be caused by contraction will shift their effect from the base metal to the weld metal which, being free from hot shortness, will absorb the stresses without the development of cracks.

New Dyestuffs

Newport Chemical Works, Inc., Passaic, N. J., has announced recently three new dyestuffs: Celanthrene Red Y double powder, Brilliant Acid Red G, and Direct Orange F. Celanthrene Red Y double powder possesses the excellent light fastness associated with the Celanthrene colors and excellent general fastness in most important particulars. It is valuable for use as a self color for yellowish pinks and reds. It also is useful in combination for old rose and salmon tones and a wide variety of pastel and mode shades. Used in conjunction with a proper selection of direct colors which leave Celanese white, many novel effects may be obtained by the one-bath method. It goes into suspension easily, levels and penetrates well, and is unaffected by metals. It does not discharge satisfactorily.

Newport Brilliant Acid Red G is an entirely new color for which there is no prototype. It produces an exceptionally bright red from acid baths, and becomes bluer and somewhat duller through afterchroming. It levels and penetrates well, and is useful for the dyeing of knitting yarns, and piece goods, as well as hat felt and other compact materials. As an acid color, it has generally good all around fastness, which is improved through afterchroming. Brilliant pink to full red shades are obtained on pure silk from acid or broken soap baths.

Newport Direct Orange F has excellent leveling and penetrating properties and possesses sufficient fastness for ordinary purposes. It is of interest for dyeing cotton, rayon, and pure or weighted silks, either as a self color or in combinations. Good unions are obtained on silk-and-cotton hosiery when dyed and degummed in one operation. It is also employed in textile printing, producing a brilliant orange when printed direct, and giving an excellent discharge when used as a ground color.

Indigosol Violet ABBF, a new water-soluble vat dyestuff, has been placed on the market recently by Carbic Color & Chemical Co., Inc., 451 Washington St., New York. This color, which is produced by Durand & Huguenin S. A., yields shades of good to very good fastness to light, very good fastness to washing and chlorine, good fastness to hot pressing on cotton and rayon. Indigosol Violet ABBF levels excellently and is, therefore, particularly adapted for the production of pale shades on mercerized piece-goods, both as a self shade and for compound shades in conjunction with other Indigosol dyestuffs. In addition to dyeing cotton, Indigosol Violet ABBF is also of importance for the dyeing of rayon and unweighted silk, for goods required to possess excellent fastness to washing, rubbing, and bleaching. It is also applied to wool from a slightly acid bath and then developed with bichrome and sulfuric acid; dyeings obtained in this manner are of excellent fastness to light, washing, and fulling.

E. I. du Pont de Nemours & Co., Wilmington, Del., has placed on the market another cold-dyeing vat color, known as Ponsol Violet AR paste. This product gives a violet of brilliant reddish shade, which is suitable not only for all types of cotton dyeing, but is recommended for use on silk and rayon materials. Ponsol Violet AR paste is said to be extremely fast to light and may be used alone or in combination where a violet of the best possible fastness is desired. It is stated that this product is suitable for application on the circulating types of closed machines, as well as the jig and padder. It exhibits good penetration, is level dyeing and is practically unaffected by copper or Monel metal. On cotton, Ponsol Violet AR paste shows an advantage over other violets, inasmuch as it changes shade only slightly after soaping, and in comparison also is faster to light, washing, fulling, and stoving. This dyestuff is not recommended for printing; but as it discharges to a clear white with Sulfoxite CL, it may be used as a ground for color discharges when a vat violet is desired.

DURENE

REG. U.S. PAT. OFF.

NATURAL, BLEACHED AND COLORED

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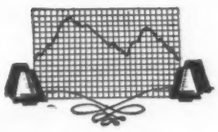

A Turn for Better in Silk Market?

Statistical Gains Noted, but Prices Are Likely to Remain Low for a Time, Says Dr. Haney

Summary: The statistical position of silk is in process of a turn for the better. The price of raw silk now seems likely to fluctuate irregularly around present levels. The great need in silk textiles is continued curtailment and low and stable prices.

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The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THERE has been little or no change in fundamental conditions affecting the silk situation, except that further progress has been made in the direction of liquidating excess stocks of raw silk. It is likely that this progress will continue, and that, within a few months, excess supplies will be sufficiently reduced to allow a more normal price situation; but the thing must be worked out through continued low prices. Such prices are increasing the quantity of silk consumed and reducing the amount of rayon and cotton used as substitutes. (Silk looms are running more largely on silk fabrics than has been true in a long time.) Already the world visible supply has shown a small decrease but, nevertheless, a distinct decrease.

The large October estimated "deliveries" had obviously been overdiscounted in the October rise in prices. To the extent that it represented mill consumption, it was a belated spurt due to the preceding low level, and increased by an undue anticipation of winter and spring demand from cutters and wholesalers. The October spurt in silk prices, however, though it was brief, showed that silk prices have fallen so low that any increase in demand is likely to bring a rally. And the way the market turned dull and stable after falling below $2.50 for Cracks XX, is a favorable technical indication.

Bull Points

1. The Japanese official estimates of the summer and autumn cocoon crops place them 11% under last season's crops.
2. The Japanese into-sight movement since July 1 has been about 27,000 bales under last season; Japanese Raw Silk Association estimates October receipts from filatures at about 11,000 boxes smaller than last year.
3. Probably most of the hedge selling against the Japanese stocks has been completed.
4. The limited supply and high price of cocoons in China.
5. A considerable tendency among fabric manufacturers in this country toward limiting stocks in proportion to sales, is reported.
6. Stocks in the hands of retailers and the garment trade are relatively small.
7. The consumption of silk is being stimulated by lower prices for good quality textiles and a larger poundage is required with less weighting.
8. The over-supply of raw silk at the end of the year will be materially reduced.
9. No further reduction in the value of silk for bank loans in Japan is probable, and therefore, little further pressure to sell on that account.

Bear Points

1. Total visible supply has been reduced only little and is still 86,000 bales above a year ago; Japanese stocks still of record proportions for the season.
2. Japanese exports are about 12,000 bales under last season.
3. Uncertainty concerning the outcome of regulation in Japan seems to have increased; the raw silk producers are protesting against closing the filatures and assert that the indemnification law is a failure.
4. Stocks of silk at New York have increased and the quantity in transit is unusually large.
5. The local spot market continues very dull, as, due to continued uncertainty, the mills buy only on recessions; most mills seem well supplied and may have anticipated requirements in October; much of spot demand said to be a gradual working out of old contracts made on higher basis.
6. The October spurt in "deliveries" partly represented postponed takings, and a considerable decline is likely this month.
7. The hosiery situation continues very bad, with large stocks and much price cutting.
8. The broad silk movement has slowed up recently, and the trade anticipates dull business during the rest of the year; already competition has led to some price concessions on spring lines.
9. Department store sales of silks and velvets in September were 15% below a year ago (following a 13% decline in August).

Obviously, the gradual increase in the quantity of silk sold at low prices is the chief constructive factor, while the growing uncertainty as to Japanese stabilization and the danger of continued over-production of silk textiles in this country are the most threatening factors.

Statistical Position

The outstanding point in the Silk Association's October figures is the fact

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that stocks at New York showed only a seasonal increase in spite of very large imports,—imports nearly as large as at the peak a year ago. It appears to follow that withdrawals from the visible supply were large. The Silk Association reports estimated "deliveries" at the record figure of 61,937 bales. Mill takings, re-exports, and any other withdrawals from the visible supply, as a total, were extraordinarily large. In part, this represents a belated reaction from the slump in July and August, but in part apparently it represents investment buying. Certainly it is not probable that it represents actual mill consumption. Whatever the source of the takings, however, they may be considered favorable at this time as indicating a willingness on the part of investors to carry an increasing proportion of the total supply load.

Of course, the large imports are a reminder of the enormous Japanese stocks, and it can be said that they are so large that in spite of the record "deliveries," New York stocks have increased fully as much as usual in October. There is thus no indication of any shortage, even temporarily, with imports exceeding deliveries by about 4,000 bales and the quantity in transit at 46,400 bales. New York stocks, plus the in-transit figure, amount to 97,600 bales, or nearly 36,000 bales above the current deliveries.

One must conclude that the process of liquidation has made some progress, but that this has not gone far enough to furnish a basis for higher prices. This conclusion is borne out by estimates of the National Raw Silk Exchange that world production is steadily declining, and doing so more rapidly than world consumption. This improved relationship between current production and consumption will facilitate liquidation, but only very gradually.

Meanwhile, the world visible at 239,678 bales shows a decrease of 5,600 bales from the preceding month, but remains 86,500 bales over a year ago. This may indicate a sustained downward trend in the visible supply. In fact, our statistics indicate this quite conclusively, and a distinct tendency in the combined stocks at New York and Yokohama to fall off is definitely indicated. Such stocks have increased in the last two months, *but the increase has been much less than usual for the season,* so that our adjusted index shows a downward trend. It is now 233% of average, but at the peak two months ago it was 266%. Meanwhile, the machinery activity index for the United States in September rose to 90% of average, having been around 85% in the two preceding months.

There is thus still a great discrepancy, and a great excess of stocks, but a turn for the better has begun. If, as seems reasonable, we can assume that the recently existing situation was discounted in the low price thus far reached, there is reason to consider that that low price will not be broken again and that the next sustained movement will be upward. It is only necessary to guard against over-optimism and to continue to operate on a cautious and restricted basis. With the existing doubts as to Japanese holding power and as to invisible supplies in the United States, and with serious business depression affecting silk manufacturing and an especially bad situation in the hosiery industry, any rallies in the silk market during the next few months are certain to be temporary. Probably a period of irregular low markets is to be expected, but the successive lows are likely to be higher.

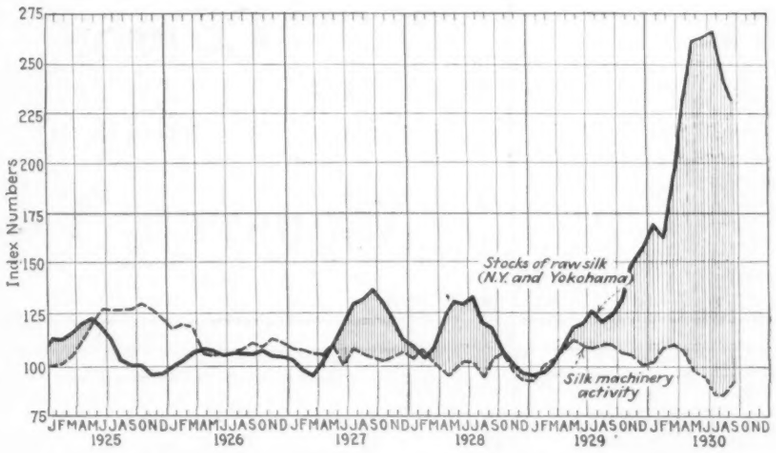

Fig. 1. RAW SILK STOCKS AND MACHINERY ACTIVITY. Stocks—N. Y. and Yokohama, adjusted for seasonal variation, three-month moving average; N. Y. Stocks, Silk Association; Yokohama Stocks, H. L. Gwalter & Co. Machinery Activity—Composite of spindles and looms adjusted for seasonal variation, Silk Association. Average 1923-1927 = 100 for both indexes.

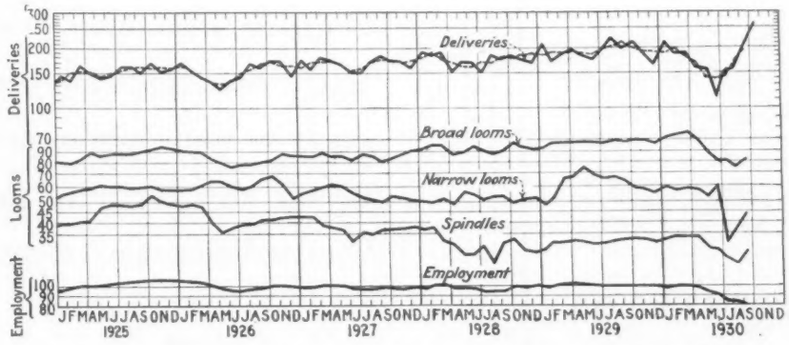

Fig. 2. INDEXES OF ACTIVITY IN SILK MANUFACTURING—Deliveries (heavy line). Bales 1921 = 100 (Silk Association). Monthly figures, dotted line; three-months' moving average, solid line. Broad looms, narrow looms, spindles, per cent active to total (Silk Association). Employment, number employed. Average 1923 = 100 (U. S. Bureau of Labor Statistics). All indexes in Fig. 2 are plotted on a logarithmic scale.

The Price Level

The October average price of Cracks XX was approximately $2.48, which compares with $2.80 in September and $5.09 a year ago. At this writing, the price may be called $2.45. During October, Cracks XX gained about 13c. and in Japan 80% seriplane gained 20 yen. As predicted, however, the price could not be maintained over $2.50. The rise continued irregularly up to Oct. 27, when it became evident that it had been too rapid and a severe reaction occurred. It is obviously best for all concerned that the price of silk should become stabilized around present levels during the prolonged period of liquidation of Japanese stocks that is logically to be expected.

Silk Textile Situation

As to the textile end of the business, we note that spindle activity increased more than seasonally in September. Wholesale sales of silks at New York, in dollars, increased in the three months July, August, and September, but in the latter were somewhat below their average relation to spindle activity. More significant still, the sales of silk goods in yards increased 7.9% in September and were 5.1% larger than a year ago. It is to be remembered that a year ago in September there was an increase of 13%. The September quantity sold represents the largest volume in three years and was a distinctly more than seasonal increase. Also stocks of silk goods decreased 5.4% in yardage and were 10.9%

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less than a year ago. These figures are certainly encouraging.

Department store sales of silks and velvets, and women's and misses' coats, suits and dresses, continue to run considerably below a year ago, but the figures are affected by lower price levels, and the September increase in wholesale sales may mean a larger retail volume.

On the whole, therefore, the silk textile trade may be said to be doing its share toward reducing the unwieldy stocks of the raw material. But the manufacturers should certainly beware of going too far. The price of raw silk has declined more than the price of representative silk goods, and this means an improved replacement margin for the manufacturer; but if he is to hold his improvement, he must keep both his production and his prices down. Low prices for silk goods are an essential part of the readjustment program. They mean both a good turnover for the retailer and a speeding of the liquidation of raw stocks by encouraging volume. The only wise course is to get and keep retail prices as low as possible.

The Textile Trend

COTTON TEXTILE MARKETS: For the first time in more than two months cotton goods have been less active than the previous week. Sales have been smaller and demand less active. This is natural when recent events are taken into consideration. Buyers are taking a breathing spell and sales are not being forced. Percale printers for the third time within recent weeks have advanced prices. Belief that action by the various States will have to be taken eventually on the question of the elimination of women from night work runs has been stated by important cotton goods sellers. Several large cotton goods mills are operating at 55% of normal runs.

WOOL GOODS MARKETS

Showing of spring dress goods by mills attracted attention this week. Crepe effects have the call. Several houses stressed serges for spring and predict that this fabric will regain its former strong position as a seller. New lines are made in lightweight fabrics ranging from 5 oz. up, it being difficult to distinguish the sheerest from silk. Aside from seasonal interest in overcoatings there has been nothing outstanding in men's wear. Mills find spring lines slow to move and indications are business will be delayed until the last minute when crowding of business will be to the disadvantage of all concerned. Worsted yarns are quiet and prices inclined to soften.

KNIT GOODS MARKETS

With the exception of women's full-fashioned hosiery, the knit goods market continues steady. Buyers are less active than last week, and there is a disposition to buy in smaller lots than before, but plenty of duplicate business is being placed. Recent price cuts have halted movement of women's full-fashioned. Heavyweight underwear production has almost caught up with sales, and buying continues strong. Spring lines are slow. Heavyweight sweaters especially V-neck pullovers and collar models are moving well, all buying being spot. Bathing-suit demand has eased off, but mills are in good position due to early buying.

SILK TEXTILE MARKETS

Raw silk has weakened slightly, and buying is light, but the undertone is firm. Importers look for a series of technical recessions between now and the end of the year, but expect January to mark a slow upturn. Prices of 13/15s are 10c. off; the 20/22s hold strong. Spun and thrown yarns are in a fairly strong position; spinners report good buying into January. Broadsilk mills regard the outlook for the year-end with some uncertainty. Current interest in spring fabrics is light, but show an increase over last week; prices uneven.

Cotton Market Irregular

Government Report Uneffective; Statistical Position Offset by Low Prices

THE Government crop report showing a slight decrease in the indicated yield when something of an increase had been expected, caused a flurry of covering in the cotton futures market in New York at the end of last week. The decrease of 48,000 bales in the estimated crop as compared with the Oct. 1 report necessitated no particular change in views of the statistical position, however, and its effect appeared to have been discounted within 15 or 20 minutes of its publication. Prices later reacted under southern selling and realizing or liquidation which appeared to be promoted by the unsettled ruling of the grain and stock markets, while there are some in the trade who feel that recent improvements in business have been no more (if not somewhat less) than a seasonal normal, and that it will require a more marked expansion of trade to sustain advances until the market is confident of a reduction in acreage. The declines, however, continued to bring in a considerable volume of trade buying below the 11½c. level for May contracts and the market firmed up again. On the whole, and in comparison with securities and some of the other commodity markets, cotton has shown a relatively steady tone.

The week's developments do not appear to have introduced any fresh factor of importance in the formulation of market opinion as a long range proposition. The statistical position points to an addition rather than a decrease in the world's carryover at the end of the season even allowing for a substantial improvement in business.

According to the New York Cotton Exchange Service world's consumption of American lint cotton for the month of September amounted to only 878,000 bales compared with 1,212,000 last year and for the first two months of this season shows a falling off of 612,000 bales as compared with the same period a year ago. Domestic consumption for the month of October was estimated at 441,000 bales compared with 395,000 in September and 639,000 in October a year ago. It seems likely, consequently, that for the first quarter of this season the world's consumption of American will show a falling off of nearly a million bales as compared with last year's. After the first of January the trade will be comparing consumption figures with a steadily diminishing volume last season, but it will take a considerable improvement in business to pull the season's figures up above last year's considering the loss of a million bales in the first quarter.

There are some in the trade, however, who feel that at prices below 11c. per pound, the market has discounted the bearish statistical position and is in a position to respond as trade improves and to advance sharply with any assurance of a substantial reduction in acreage next spring. There have been no fresh developments of importance with reference to the acreage outlook, but bankers appear to be joining in the move to secure curtailment in the area planted. More confidence will be felt in the success of this movement if it has the aid of low price levels, and the bullish or investment sentiment which has been a sustaining factor since the break to 10.65 for May contracts early last month, is likely to become less aggressive on such advances as might possibly jeopardize the prospect for an effective reduction in the area planted.

The standard cloth statistics for the month of October reflected a continuance of mill curtailment but a strengthened position for cotton goods which will doubtless assert itself in the form of increasing mill activity if business continues to hold its recent gains. Trade buying has been very much in evidence from both domestic and foreign sources. It is understood that the

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QUISSETT COTTON YARNS

cotton co-operating marketing associations are replacing their sales of spot cotton by purchases of futures, while other dealers are said to be selling hedges against purchases of spots in the South in view of the prevailing premiums on the later deliveries.

Edge Off Memphis Demand

Memphis, Tenn., Nov. 10.—The edge seems to be off demand for cotton in this market. Demand is still fairly active for high grades including 1⅛ in. and longer staples, probably due to impending scarcity. Medium and lower grades, all lengths, are rather slow sale, although toward the close of October, the trend of buying to fill commitments seemed in that direction. Demand for ⅞ to 1 1/16 in. cottons is less insistent but still fairly active. Basis on strict middling 1⅛ in. staple is officially quoted 150 points on December against 125 on the previous week, but it is still possible to obtain concessions of 25 to 35 points; basis on other staple lengths is unchanged.

Shippers generally attributed the quieter market to the imminence of the Government report, issued last Saturday, and expressed the opinion that much cotton must be bought to cover requirements already on mill books. The effect of the Government estimate and especially the census report on first hands was to encourage higher price ideas. Stocks of cotton are piling up here; the total stock is now ahead of last year at this time, when new high records were made, notwithstanding that receipts for the season to date are 125,000 bales smaller than they were to this date last year.

The weather during the week, in the cotton belt as a whole, was only moderately favorable for harvesting the remnant of the crop. Approximately 90% of the crop is out of the fields. The crop of Memphis territory is turning out about 70% of last year's crop.

Good Cotton Yarn Interest

Weavers and Knitters Buy for 1931 Delivery

CONDITIONS are satisfactory in sales yarns. While trading has not been at a rate as active as peak weeks in September, buying has been of good volume. Spot interest is active and in addition there is a call from knitters and weavers for deliveries running well into next year. Carded spinners are apt to quote half cent or more higher than for nearby. Combed and mercerized are selling far ahead at same prices quoted for spots.

Although several days of softness in the raw material market finally had its effect on yarn prices by the middle of this week, it is noticeable that the latter are holding steadier than cotton. This has given spinners a slight improvement in their margins but is less apparent in the more active numbers such as 20s-2 and 30s-2 warps, in which larger supplies have been resulting in prices slightly under the best of last week.

November Sales Large

Indications are November will be another good month with sellers from the standpoint of both shipments and new business booked. One of the largest concerns reports that the first week this month they booked new business in excess of production.

Weavers as well as knitters are interested in deliveries far ahead and considerable business of this nature has been closed. Manufacturers feel that the present easing in the raw material market is temporary and prices will go back to the level of two weeks ago. For this reason many are buying ahead even though they note little improvement in volume of goods orders on their books.

One instance of this type was reported. An insulator made inquiry for 5,000,000 lb. of tinged weaving yarn and majority of selling houses were working on this at the middle of the week. Deliveries on such a contract would run well into the middle of next year.

Weavers Cover Ahead

Narrow fabric, braiders, hair cloth manufacturers and mercerizers have been the most persistent buyers this week. Contracts have been placed by them calling for shipments to be made during the first quarter of next year. In this connection it is interesting to note that carded yarn spinners quote and obtain at least half cent more for such deliveries than for 1930 months.

Spinners have a fair volume of business on their books for production during the remaining months of this year and this makes them independent when deliveries far ahead come up for consideration. They feel margins will expand to more profitable basis next year. In view of this they demand premiums when such shipments are wanted.

Margins in combed yarns are on a different basis and combed spinners do not hesitate to sell that far ahead at current prices. Contracts for single combed knitting have been placed this week in volume, deliveries running well into next year. One concern selling both carded and combed knitting was in such a position that they refused to sell large contracts of combed unless the buyer would specify part of the amount in carded knitting counts.

Mercerized Yarns Active

Improvement of the knitting position is seen in large sales of mercerized yarns. Last two weeks have been the best processors have experienced for a number of months. One reason for it is because prices of two-ply mercerized have been reduced four cents by leading firms. Another is that this came at just the time when knitters were ready to buy additional yarn, having larger goods orders in hand.

Southern Quotations Firm

Carded yarn sales in southern market centers were smaller in total volume but prices have been comparatively firm in the face of a declining raw cotton situation. Deliveries running into next July were also reported from these centers but bulk of business booked called for nearby shipments.

Southern knitters have been calling for mercerized yarns on existing contracts in increasing amounts and several hosiery manufacturers have anticipated their requirements for the first half of next year. Combed yarn spindles of Gaston County area operated at approximately 48% of normal capacity last week, showing an improvement as compared with previous week.

Cotton Goods Hold Gains

Less Active Inquiry Finds Sellers Firm

NOT easily scared. This explains the attitude of cotton goods sellers at present. The last week has been less active, in fact demand has been smaller than for some time. It has caused no softening on the part of mills or selling houses and prices continue as high as before, or even higher in a few instances. Sellers look into the future with confidence that was lacking two months ago. A week or two of quietness will no longer scare them.

Despite advances in prices of cotton goods during recent weeks, mills assert that, with the possible exception of 80 squares, present prices will not permit the manufacturer any reasonable profit. Still further gains in prices, assuming cotton continues around its present level, will be necessary before mills are selling their goods at a profit.

Fundamental Strength

Fundamentally the situation remains strong. Mills are curtailing in a ma-

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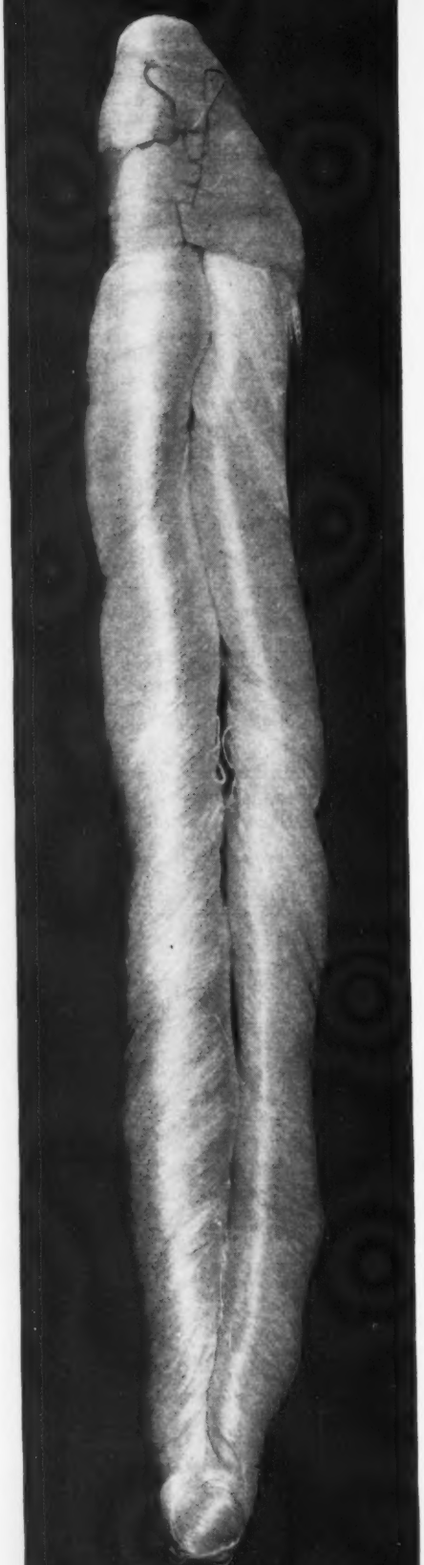

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jority of instances; but in this connection it is pointed out that there are still manufacturers which have not done all they should do in this respect, neither curtailing nor holding for fair prices. Until these join the procession there will be soft spots to be found in the market. These are far less numerous than at any time since summer. Stocks are being reduced, and production, except in these few instances, is being held down to meet current demand.

Higher prices have been named on print cloths by large sellers, latest quotations being ⅛c. above previous list. This brings 38½ in. 64x60s up to 5¾c., comparing with former prices of 5⅝c.

New price list became effective Monday on printed percales. These lines have been advanced three times and prices are now 1½c. above the low point this year. Converters did not follow the advance, but will it is expected that they too will fall into line in the near future.

Sheeting Sales Larger

Demand for wide sheetings has shown marked improvement and a number of other lines that have heretofore been lagging in sales are showing signs of becoming more active.

One of the largest sellers states that in his opinion full effects of the curtailment program among mills has not yet been felt. He feels that by spring the enormous yardage that has been taken out of the market will be more effective than has yet been seen. Small stocks will eventually mean a better margin for the manufacturer. That majority feel this is really coming is to be seen in their continued refusal to sell much beyond the end of 1930.

◆Waste Prices Slightly Easier

THERE was a moderate demand for all types of cotton waste this week. Prices were slightly easier early in the week, particularly on stuffing wastes and threads. Peeler comber and strips, however, were affected to a lesser degree because of the relative scarceness of these commodities. It would require a sharp break in cotton prices to bring about any sizable decline in prices of these spinnable materials. There has been a considerable foreign demand for comber during the last two or three months, and it is estimated that over 3,000,000 lb. have been exported.

One of the chief topics of discussion among dealers this week was the formation by a number of New England fine goods mills of the General Cotton Waste Corp. which, it is understood will control the disposition of the wastes of over 1,500,000 cotton spindles. It is understood that these wastes will be sold through an agent on a commission basis. In view of the generally unsatisfactory situation existing during the last two or three years under the contracting system of cotton waste merchandising this new development will be watched.

Wool Consumption Increases

September High Month of Year for Domestic Material—Imports at Low Ebb

THE market continues firm. The bulk of the unsold wool of the domestic clip is controlled by the National Wool Marketing Corp. Independent houses see no reason to force sales in view of the generally good clearance, particularly of the finer grades of domestic wool. October was a quiet month for most wool houses, but the consumption of wool in the mills was steady and equal to the September consumption, the high point for the year on domestic wool. Price levels are not likely to show any material change between now and the end of the year. There is a general unwillingness on the part of holders to accept business at the low bids arriving from top-makers and manufacturers. Fine domestic wools of the shorter staples continue in fair demand. A feature of the wool market for year to date has been the relative neglect of strictly staple fine wools in favor of French combing qualities. Woolen wools are quiet, and dealers in these commodities are disturbed by the intention of the American Woolen Co. to close the Assabet Mills.

Imports of wool this week were at the low point of the year, only 50,000 lb., bringing total import for year to date into Boston to 61,000,000 lb. as compared with 88,300,000 in the similar period of last year, a decrease of 27,300,000 lb. Total receipts of domestic wool into Boston for year to date are 235,000,000 lb. as compared with 190,000,000 in the similar period of last year, an increase of 45,000,000. Shipments of wool out of the city are running well behind those of a year ago, 117,00,000 lb. compared with 153,000,000 last year, a decrease of 36,000,000.

Merino wool in Australia is selling freely on current basis of values and there is a good tone to the market. Japanese and Continental buyers have practically made the market level in Australia and English buyers in order to acquire additional supplies have had to raise their buying limits. The South African market has not thus far developed the same degree of stability. The best types of wool are firm, but buyers are less aggressive than in the Australian market. The Cape wool clip this season is the largest for many years, 337,000,000 lb. as compared with 307,000,000 lb. last season and 181,000,000 lb. in the 1922-23 season.

Softer Market in Rags

The influence of the general business depression as reflected in the wool textile industry is seen clearly in the reworked wool industry which, taken as a whole, is probably not operating much above 50% capacity. Most graders would insist that even this figure is too high and judging by their limited sales there seems good reason for their contention, but on the other hand it may be taken for granted that the big manufacturers of recovered wools are at no time down to bare boards on their rag supplies.

The market was low enough a month ago but has recently fallen off several points featured by a softer market in mixed rags which, unless something happens in the near future, may touch the 5c. objective, regarded by rag graders as the basic price that would stabilize that situation. In absence of any substantial business the only thing that graders and others can do is to wait for an improvement in the consuming industry. The Dewsbury market is no better off than ours. In the English market it is realized that current values on all classes of rags are remarkably cheap. There is no speculative buying and both the import and export business are at a low ebb.

Waste Situation Uncertain

The market for wool waste continues quiet. In absence of bulk business to test values prices vary considerably in sections, particularly on materials not strictly of best quality. The market may be characterized as irregular and on most sorts tending to favor the buyers. In the Bradford market it is believed that prices have reached the bottom, following another decline this week all along the lines. Laps and thread wastes are quite irregular and strongly in the buyer's favor. Fine white drawing lap is now quoted 42c., giving an approximate landed price, American condition, duty paid, of 82c. Fine white threads are quoted 28c. or 55c. landed, duty paid. Mill demand continues to run to fine qualities and coincident to this demand is a gradual increase in use of fine and half-blood scoured wools. Competition for business is still keen, dealers bearish in attempting to secure supplies and moderately bullish as sellers. The market is meeting competition from cheap wools. With Texas short wool quoted clean basis around 65c. and California Northern around 62c. it seems rather evident that mills are not likely to fall over themselves in any desire to take on thread waste above 60c. per pound.

Noils Slow, Yet Firm

In the noil market, although mill interest continues at a low ebb, prices are holding relatively firm. Holders of noils show no intention to stimulate larger

Novelty yarns that meet the mode

We can supply you with the right novelty yarns today, so that you keep abreast of the market.

Our ability to produce unusual yarns in combinations that sparkle with originality has added many leading weavers and knitters to the list of Toulson customers. This same ability can help you create new fabrics strong in selling power.

A study of Toulson samples will suggest new fabrics to you. Silk—Rayon—Worsted—Cotton—in any combination.

TOULSON YARNS, INC.

Bridgeport, Conn.

TOULSON

NOVELTY YARNS

mill interest by lowering their prices. It would be difficult to replace noils at producing centers if dealers' stocks were sold below current market. The situation makes for much caution. The approach of cold weather may probably stimulate the goods market and result later in larger sales on wool noils.

Worsted Yarns Less Active

Seasonal Buying By Knitters Declines

NO GENERAL reduction in worsted yarn prices has been made but the most active counts, such as English knitting and French spun mixtures, have been revised downward. These changes have been sufficient to cause more hesitation than noted previously and the result has been buyers have been making smaller commitments and total volume moved has been below an average week of last month.

Outerwear spinners have booked a much smaller volume since the last cut in their prices and the opinion is that the fall buying spurt in worsted yarns by knitters is over. Indications point in this direction and it is probable that majority of knitters have yarns to last them for the balance of this year.

Seasonal Buying Over

Seasonally the spurt should be over. November and December are normally dull months with outerwear spinners and while a few thought that demand would continue longer this year because of lateness in getting started, lack of demand this week gives the impression this is not to be. Small filling-in lots will be the rule for the balance of this year. With this in prospect a number of spinners in Philadelphia section have revised their operating schedules slightly to offset smaller sales.

Fall and winter merchandise is completed so far as spinners are concerned and they are looking forward to time when samples for spring and summer will be made. Yarns for the next season have not begun to move yet and it is probable there will be no sustained move in this direction until after the first of the year.

Sales Up To Last Year

Trading so far this month will compare favorably with that of the same month last year in pounds. Spinners believe that while volume will not be found in November and December sales, there will be a steady call for prompt shipments. These will permit spinners to operate at almost their former rates and prevent accumulations of stocks.

English spun outerwear counts are quoted at $1.00 by the largest spinners, but there are several willing to sell 2½c. under that figure. Neither are booking important-sized contracts and further price reductions would not stimulate trading at this particular time.

There is a slightly better feeling in men's wear circles but orders for mixture yarns are slow coming to spinners. Indication of this is seen in recent reduction in 2-30s, 64s mixes, to $1.67½. Instead of causing a spurt this has had no noticeable effect upon buyers. They prefer to wait for deveopments in goods centers before placing yarn contracts.

◆Spring Wool Goods Styled Attractively

NEW lines that were shown by dress goods firms this week indicate that these manufacturers mean to consolidate the gains they made during the fall season. Woolen and worsted dress goods and suitings have sold more actively and the new lightweight fabrics for spring wear appear most attractive. Favor has been equally distributed between worsteds and woolens. The sheerest fabrics weigh not more than 5 ozs., and new effects have been produced which make it difficult to know whether the material is silk or wool.

Style Shows Held

A number of the selling houses have had their outstanding lines made up into garments and have shown them in latest style dresses, coats and suits. It is interesting to note that several of the dresses incorporated silk in the top to remove any possible objection the wearer may have against wearing wool or its manufactures directly against the skin. This is a novel departure for woolen or worsted manufacturers.

Blues, browns and greens were the predominant colors that were shown in new lines and the fabrics covered a wide field of design. Serge has come back for women's wear according to several houses which show attractive dresses made from this formerly popular material. Crepes, suedes and fabrics with a waffle weave attracted wide interest.

Nubby Effects Popular

Ratine and other nubby materials are well represented in spring fabrics. A large number shown have the appearance of crepe and this effect will be one of the most popular for spring wear, according to manufacturers and selling firms.

With the exception of a brisk seasonal interest in overcoatings there has been nothing startling in the men's wear section. Selling houses are concentrating on the new lines for spring. Although orders are coming in slowly, they predict a good season.

Most active trading may be confined to a short time at the end of the season. Bright colors for these lines are indicated in new fabrics. Total sales show that while novelty effects for men still represent only a small percentage of the total, this has been expanding and now represents a larger fraction than at any time during last three years.

Raw Silk Fluctuations

Numerous Mild Recessions Up to Year-End Expected

THERE are signs of a more stable feeling in raw silk. The market veered off this week, prices of 13/15s dropped 10c., buying was indifferent, and by all the rules, the importers should have been in gloomy spirits. This is far from the case, however; importers take the recession as a natural development, and indeed they look for the next six weeks to bring a series of fluctuations, averaging back to approximately present levels at the end of the year.

The market tone is steady and the immediate outlook is considered satisfactory. The attitude of the best minds in the trade is that a continued series of mild recessions, bringing no great rise and no great decline, would be the best thing that could be hoped for. Broadsilk mills are not expected to do any big buying between now and the holidays; their stocks in some cases are ample; this is especially true of the unlucky companies that "bought high." The rest of the trade is expected to limit contracts to small week-by-week buying which will fill their needs for the present and enable them to enter 1931 with minimum inventories.

Orders Favor 20/22s

Barring the drop of 10c. on 13/15s prices are about the same as last week. Current orders lean to 20/22s and there is little stock in New York to meet orders, the result being that manufacturers are compelled to pay high for immediate shipment. Importers do not expect prices to drop to the low levels of early fall, even though December does bring sharp recessions. They look for a moderate upturn toward spring, which should be strengthened by the annual closing of the Japanese filatures.

Advices received in New York indicate the likelihood of a general closing of filatures through March, though this is not yet official. Such a move would do much to improve the situation, by giving the Japanese a chance to move their surplus stocks. There is a firming tendency in Yokohama and Kobe, due to the fact that the filatures are no longer pressed for cash.

Broadsilk mill men complain of slow movement of fabrics and are less confident about raw silk purchases than they were last month. Importers consider the weavers were too optimistic in October and were too quick to increase output; the importers say they would prefer to see more cautious broadsilk production even if it slackened raw silk buying because it would improve the financial position of their customers.

Japanese Campaign

Opinion in the New York market on the proposed Japanese campaign to advertise silk in the United States, is very varied. The project calls for an annual outlay of $500,000 on silk promotion. Importers favored the idea in the abstract, but the general attitude was to withhold opinion until the details of the project have been made known.

Spring Broadsilks Improve

Buying Still Slow But Cutters Are More Confident

BOTH cutters and retailers gain confidence slowly as regards broadsilks. Fabric manufacturers report a steadily increasing coverage in spring prints, especially shantungs; volume in these fabrics is still light; the consuming groups are determined to end the year with low inventories, so they refuse to cover ahead to any extent. Spring orders to date emphasize flat crepe, crepe-de-Chine and chiffon. Chiffon is still ahead of its season and orders come only from manufacturers and retailers catering to the Palm Beach trade. Preferred colors are browns, greens, wine tones, black and navy, with stress on the tinted fabrics. Broadsilk mills look for improved call from retail trade.

Shantungs Pick Up Slowly

Shantungs move forward but no real turnover may be expected for another few weeks. Reaction of garment manufacturers and piece goods buyers has been good and the weavers are hoping that these rough goods lines will continue to move through the holidays.

In general price emphasis is lessening, due to the clearance of much distress merchandise. Weavers find cutters more disposed to yield to quality appeal, even if it means a sightly increased price. Considerable of the $1.59 and $1.89 clearance lots which served to weaken the market a month ago, now have been sold, bringing a healthier tone.

Canton Plains Continue Active

Printed cantons, and silk-and-wool numbers included in the early fall offerings have been virtually cleared, but there is still an active cutter interest in plain cantons. Brown, green, blue and black cantons are selling steadily. Satin crepes also are in good call for the manufacture of evening gowns.

Mills continue producing plain cantons and several other winter lines, but attention is turning rapidly to spring lines. Shantung and other rough goods output increases daily; the variety of shantungs will be particularly wide and inclusive this season and the trade looks for a steady turnover.

◆Silk Yarns in Fairly Firm Position

SILK yarn markets approach Christmas in a fairly firm position. Spun yarns are particularly satisfactory; several large spinners have substantial business booked into January, and there are few firms that are not getting at least moderate sales just now. Broadsilk weavers are buying lightly but steadily.

Browing emphasis on shantungs for spring has made these weavers confident and they are gradually getting into volume production on these fabrics, which in turn has stimulated demand for spun yarn; 60/2 for shantungs, has been enjoying healthy movement. Spinners are satisfied with the sales situation, and they regard the spring outlook as very good. The low prices continue a source of complaint, but no important change at that end is expected before January. Spinners are getting list prices without difficulty. Stocks are large enough to permit spot shipment, which is still the ruling passion among buyers.

Thrown Yarns Firming

Hosiery mills placed some future orders for thrown yarn, requesting trams and grenadines in about equal ratio; they try to bargain prices down, but throwsters are putting some resistance at that end. Broadsilk mills show interest in three and four-thread canton crepe yarns, and buy steadily, all small orders. Stocks are fair but not plentiful. Market outlook is uncertain.

Rayon Yarn Demand Slackens

Entering Year-End Lull, Some Producers Believe

RAYON yarn demand shows a slackening; a fair amount of spot business was placed this week, but very few orders for December. This easing has not aggravated the price uncertainty, to any degree, as numerous rayon producers are in a sold-up condition for some weeks. However, the prospects for the last six weeks of 1930 are not promising. Manufacturers seem to be taking it for granted that January will bring a price reduction, and they are buying only what they need for the next few weeks. As production often lets up in December, their needs for this period are light. It is believed in the yarn market that December sales will be considerably less than usual.

The policy of the consuming groups in limiting their coverage to November-December needs, should bring a sharp upcurve in buying in January; indeed, January sales should be good whether producers cut prices or not, according to opinions expressed this week, as mills will then be obliged to buy and buy promptly, for continued production of spring goods. Practically the only 1931 business being placed at present is going to one rayon producing company which offers a 90-day price guarantee, thus protecting manufacturers against the expected January cut. Producers themselves refuse to make predictions regarding January prices; they clearly expect a cut but a sharp drop in buying for the two closing months, which would bring mills nearly to the end of their stocks, might change the picture. One rayon sales manager, when the possibility of crowded buying in January was suggested to him, answered that such a situation might influence producers to reconsider on the cut. However, as the revision has been virtually pledged to numerous large customers, any change of program at this late date seems unlikely.

Rayon demand from cotton weavers is less, and all orders are limited to immediate needs. The call is mainly for 150s and 100s. Prices are very much off list, the big producers being in keen competition with each other; companies having a surplus of certain grades are underselling to clear their stocks. The total surplus of the industry still hovers between 25,000,000 and 30,000,000 lb.

so far as can be learned. Some leading producers have cut output to between 75 and 80% of capacity, but a large portion of the trade is still operating 100%. It seems unlikely that the surplus can be pared much before January.

Rayon Waste Sluggish

There is little change in the rayon waste picture. Manufacturers placed light orders for open bleached this week, but the buying tone generally was indifferent. Prices hold steady, as there is no pressure for concessions. The consuming groups are not manufacturing on any real scale, and do not need substantial quantities of waste. Waste dealers do not expect any perceptible improvement before the new year. Stocks are moderate.

Hosiery Cut Slows Up Sales

Full-Fashioned Buyers Hesitant; Sweaters and Underwear Active

WITH the important exception of women's full-fashioned hosiery, the knit goods market continues steady. Buyers are less active than last week, and there is a disposition to buy in even smaller lots than hitherto. Plenty of small orders are being placed, especially for heavyweight underwear and staple sweaters. Recent price reductions have slackened demand for women's full-fashioned hosiery, and it probably will be ten days to two weeks before this branch of the market resumes activity. Jobbers and retailers both are doubtful of full-fashioned prices. Sales on Monday and Tuesday were better than last week, and knitters hope for a gradual pick-up.

The cut in full-fashioned prices came at an unfortunate time, so far as sales are concerned; demand had been active and fairly confident, but now the market is bewildered, prices are as shaky, if not shakier than they were before the reduction, and there is a crying need for more firmness on the part of hosiery mills. There are reports in Worth Street that certain mills are selling even below the new low prices quoted by leading companies, which does not help matters any.

Knitters expressed the view that it would have been much better to have deferred the price cut until, say, Dec. 15, by which time most of the holiday business would be over; as it is, the only benefit of the cut was to bring list prices down to the level of the sub rosa prices prevailing previous to the reduction, which benefit has already been offset by new weakness. Current call stresses grenadines, with a moderate demand for trams. Men's goods are in fair position at the popular-price end. Numbers retailing at 15c. and 25c. and 35c. move steadily, the emphasis being preponderantly on the lowest-price lines. Mills complain that buyers will not take any of the 50c. numbers. These factors will not go higher than the lines retailing at three pairs for $1. There is a fair call at this level, chiefly for spirals in distinctive color mixtures. Mills look for crowded buying of low-priced half-hose at the end of the month, due to the backward coverage for Christmas.

Heavyweight underwear production has very nearly caught up with sales, and pressure of spot call continues. Prices are firm; buyers have difficulty in getting anything nearer than ten days, as numerous firms are producing to order. Spring cotton lines move slowly; mill men are awaiting cold weather to spur interest. Market tone is confident and a slow pick-up in spring lines is looked for.

Winter Sweaters Active

Heavyweight sweaters, especially V-neck pullovers and collar models are moving well, all buying being spot. Mills are in a fair position on stocks and can make quick deliveries. Sales executives regard the season as much better than expected, and they say turnover may parallel that of last year. Bathing-suit demand has eased off, but mills are in good position due to early buying. Spring sweater interest centers on the coming week's openings in Chicago. Worth Street is in conflicting mood regarding the Chicago showings, numerous agents expressing doubt that the openings would be inclusive enough to faithfully represent the industry. There is a strong feeling that spring lines should not be offered until January, in view of the general hesitancy, and the fact that numerous retailers have not yet fully covered for Christmas.

Quiet Week in Financial Circles

Evidences of Greater Stability In Listed Shares Is Encouraging

GREATER firmness in the security markets was evidenced this week. Textiles partook in this movement but were, on the whole, traded in only light volume.

Offer for Flint Mills

A tentative offer of $46 per share, subject to deposit of two-thirds of outstanding stock by Nov. 24, has been made to the Flint Mills, Fall River, Mass., by Jerome A. Newman. The original offer was $40, later being advanced to $47, and finally reduced to $46 in view of $1 per share dividend paid stockholders following the $47 per share offer. It is understood the company's surplus totals $499,000 or about $42.75 per share, but some abatement of taxes is expected from the city.

Boston Woven Hose Profit

The Boston Woven Hose & Rubber Co., Cambridge, Mass., reports for the year ended August 31, 1930 net profit of $599,218 after taxes and depreciation, but before inventory and reserve adjustment, equal after 6% preferred dividends to $6.44 per share of common. In the previous fiscal year earnings were equal to $11.80 per share on the common stock. President J. Newton Smith, in his report, started in part "Income carried to surplus was $599,218, from which only a deduction of $102,562 was necessary on account of inventory and reserve adjustments. Shrinkage in sales for the year has been $1,300,000 or 12.6%, while poundage shipped decreased 9,900,000 pounds, or 19%." Net quick assets on August 31, 1930, totaled $3,617,323 as compared with $4,089,419 a year ago.

Border City Reduces Capital

Stockholders of the Border City Mfg. Co., Fall River, Mass., have voted to reduce capitalization $1,800,000 to 18,000 shares of no-par value, carried at $471,633 under liabilities on the balance sheet. They also accepted recommendation of directors that valuation of real estate and machinery be reduced from $1,820,912 to $315,000.

Canadian Silk Firm Gain

Ontario Silknit, Ltd., Toronto, Canada, reports that sales have shown an increase over the same period in the year 1929. From the standpoint of profits, the first 7 months of 1930 have not been quite so good as last year. Profits from operations for 1929 amounted to $311,360, from which $66,740 was allowed for depreciation and $33,202 for income taxes, leaving net profits of $211,417.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
50	Newmarket	100	15	—12
62	Lancaster, com	100	$2 lot	.....
55	Associated Textile	...	35–36½	.....
35	Naumkeag	100	80–84	.....
10	Wamsutta	100	101½	— 5½
25	Arlington	100	18½	— 3½
237	Total			

QUOTATIONS

at close of business, Nov. 12, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Nov. 12	Nov. 5	Nov. 13 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60..	4¼c.	4¼c.	5¼c.
38½-in., 64x60, 5.35..	5½–5¾c.	5½c.	7½–7¾c.
39 -in., 68x72, 4.75..	6⅜–6½c.	6½c.	8½–8¾c.
39 -in., 72x76, 4.25..	7⅛c.	7⅛c.	9½–9¾c.
39 -in., 80x80, 4.00..	7¼–8 c.	8–8½c.	10–10¼c.
BROWN SHEETINGS			
36-in., 56x60, 4.00..	6½c.	6½c.	8⅜–8½c.
36-in., 48x48, 3.00..	7¼c.	7¼c.	10¼–10½c.
37-in., 48x48, 4.00..	5¾–6c.	6c.	8½–8¾c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70.	6¾c.	6¾c.	9½–9¾c.
36½-in., 64x60, 5.75.	5¼c.	5¼c.	7¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd...	7⅞c.	7⅞c.	10¾–11c.
Denims, 2.20.....	12½c.	12½c.	16.33c.
Tickings, 8 oz	16 c.	16 c.	20–21c.
Standard prints.....	7½c.	7½c.	9½c.
Eastern staple ginghams, 27-in.....	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	9 —10
Peeler strips	8 — 8½
Sak. comber	8½— 9
Choice willowed fly	4½— 5½
Choice willowed picker	3 — 4½
Sak. strips	11 —12
Linters (mill run)	2½— 3½
White spooler (single)	7¼— 8

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.20½– .21	22s	$0.23 – .23½
10s	– .21	24s	– .25
12s	– .21½	26s	– .26
16s	– .22	30s	– .27½
20s	– .22½	40s ex.qual..	.39 – .40

TWO-PLY SKEINS AND TUBES

8s-2	$0.21 – .21½	26s-2	$0.26
10s-2	– .21½	30s-2	– .27½
12s-2	.21½– .22	36s-2	– .34
14s-2	– .22	40s-2	– .36
16s-2	.22 – .22½	40s-2 hi. blk.	– .40
20s-2	– .22½	50s-2	.44 – .45
24s-2	– .25	60s-2	.53 – .54

SINGLE WARP

10s	$0.21	24s	$0.25
12s	– .21½	26s	– .26
14s	– .22	30s	.27½– .28
16s	– .22½	40s ex. qual..	– .40
20s	– .23		

TWO-PLY WARPS

8s-2	$0.21½	24s-2	$0.25½– .26
10s-2	.21½– .22	26s-2	.26 – .26½
12s-2	– .22	30s-2	.27½– .28
14s-2	.22 – .22½	40s-2 ordin..	– .36
16s-2	– .22½	50s-2	– .45
20s-2	.22½– .23	60s-2	– .54

8s-3 and 4-ply skeins and tubes; tinged, 18–18½; white, 19½–20; waste 17–17½

HOSIERY CONES (Frame Spun)

8s	$0.20	22s	$0.23½– .24
10s	.20 – .20½	24s	.24 – .25
12s	.20½– .21	26s	.24½– .25½
14s	.21 – .21½	30s tying	– .27
16s	.21½– .22	30s reg	.28 – .28½
18s	.22 – .22½	30s ex. qual..	.30½– .31
20s	.22½– .23	40s	.36 – .37

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

29s-2	$0.35 – .36	60s-2	$0.55 – .56
30s-2	.40 – .41	70s-2	.65 – .66
36s-2	.41 – .42	80s-2	.78 – .80
40s-2	.43 – .44	90s-2	.94 – .95
50s-2	.48 – .49	100s-2	1.16 –1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.36 – .37	60s-2	$0.56 – .57
30s-2	.41 – .42	70s-2	.67 – .69
36s-2	.42 – .43	80s-2	.78 – .80
40s-2	.44 – .45	90s-2	.97 –1.00
50s-2	.49 – .50	100s-2	1.20 –1.25

SINGLES

12s	$0.29 – .29½	30s	$0.38½– .39
14s	.29½– .30	38s	.41½– .42
16s	.30 – .30½	40s	.42½– .43
18s	.30½– .31	50s	.47½– .48
20s	.31½– .32	60s	– .55
24s	.34 – .34½	70s	– .65
28s	.37 – .37½	80s	.77 – .78

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.48 – .49	90s-2	$1.27 –1.30
30s-2	.50 – .51	100s-2	1.57 –1.59
36s-2	.53 – .54	120s-2	1.96 –2.00
40s-2	.56 – .57	30s	.65 – .67
45s-2	.58 – .59	40s	.70 – .72
50s-2	.60 – .62	50s	.77 – .79
60s-2	.68 – .70	60s	.85 – .87
70s-2	.80 – .82	70s	.97 – .99
80s-2	.92 – .97	80s	1.19 –1.21

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Nov. 6	For Week—High	For Week—Low	Closed Nov. 13	Net Chge.
November	10.58	10.96	10.60	10.96	+ .38
December	10.77	11.18	10.76	11.16	+ .39
January	10.97	11.37	10.93	11.33	+ .36
February	11.05	11.37	11.05	11.41	+ .36
March	11.18	11.63	11.16	11.56	+ .38
April	11.29	11.62	11.31	11.67	+ .38
May	11.41	11.88	11.41	11.83	+ .42
June	11.50	11.81	11.51	11.87	+ .37
July	11.61	12.02	11.58	11.93	+ .32
August	11.68	12.00	11.66	12.00	+ .32
September	11.76	12.08	11.73	12.08	+ .32
October	11.85	12.22	11.85	12.16	+ .31

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Friday, Nov. 7	10.95	10.65	6.03
Saturday, Nov. 8	11.15	10.85	6.04
Monday, Nov. 10	10.80	10.54	6.09
Tuesday, Nov. 11	11.00	...	5.96
Wednesday, Nov. 12	11.25	10.90	6.02
Thursday, Nov. 13	11.00	10.72	6.11

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Nov. 12		Change
November Sak	17.53	—0.37
December uppers	11.93	—0.35

Nov.-Dec. Shipment c. i. f. Boston.

(Tariff not included)	(Prices Nominal)
Fully good fair Sak	20 65
Fully good fair to good Uppers	14 5

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	22
Peruvian Pima No. 1	24½
Peruvian Moderate Rough	18
Peruvian Full Rough	23
China Tientsin No. 1	10.85
India Rough	8½ to 11
India Smooth	8½ to 11

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday Nov. 8	Saturday, Nov. 1
10 markets average	10.40	10.43
Memphis	9.75	9.80

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	12.25–12.60c.
1 3/16-in	13.75–14.10c.
1¼-in	18.75–19.10c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	32,293	39,660	40,179
F.o.b. included in total	28,409	31,137	35,256
10 markets	233,162	258,777	262,501

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	39,154	40,084	28,967
Gross receipts	78,961	85,482	69,921
Total since Aug. 1, net	339,861	465,419	28,402
Shipments	57,817	68,548	70,064
Total since Aug. 1	340,178	545,330	423,222
Total stock	352,347	344,351	206,824
Increase for week	21,144	17,134	6,860
Unsold stock in hands of Memphis factors	73,155	61,175	.....
Decrease for week	3,407	333	.....

AVERAGE PRICE NOV.–DEC. SHIPMENT
HARD WESTERN COTTON
F. o. b. New England

	Middling	St. Middling
1 1/16 in	13½–13¾c.	13¾–14c
1⅛ in	14½–14¾c.	14¾–15½c.
1 3/16 in	15½–15¾c.	16¾–16¾c.
1¼ in	19½–22c.	20½–23c.

Basis on New York, New December 11.12c.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling—Nov. 5	Middling—Nov. 12	Stocks—Sales	Stocks—This Week	Stocks—Last Year
Galveston	10.75	10.95	3,579	639,471	518,508
New Orleans	10.63	10.90	26,167	655,418	488,240
Mobile	10.15	10.30	4,642	142,471	57,593
Savannah	10.29	10.63	3,931	287,214	93,055
Norfolk	10.56	10.81	1,262	88,374	55,907
New York	10.95	11.25	700	228,963	99,832
Augusta	10.25	10.50	1,580	139,107	101,310
Memphis	9.55	9.75	32,441	366,905	364,504
St. Louis	9.75	9.25	.....	3,057	3,766
Houston	10.60	10.85	55,631	1,460,471	1,007,665
Dallas	10.05	10.30	57,055	40,404	9,233

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	.75†	1.00†	.85†	.75†	0.88†
S.G.M	.60†	.75†	.75†	.63†	.70†
G.M	.50†	.50†	.60†	.50†	.51†
S.M	.35†	.25†	.35†	.25†	.30†
S.L.M	.75*	.75*	.65*	.50*	.68*
L.M	1.50*	1.75*	1.50*	2.25*	1.70*
S.G.O.**	2.50*	2.75*	2.50*	3.50*	2.83*
G.O	3.50*	4.00*	3.50*	4.50*	3.85*

YELLOW TINGED

G.M	0.50*	0.75*	0.50*	0.50*	0.58*
S.M	1.00*	1.25*	1.00*	1.00*	1.05*
M.**	1.75*	2.00*	1.50*	1.50*	1.68*
S.L.M	2.50*	2.75*	2.25*	2.25*	2.37*
L.M.**	3.50*	4.00*	3.00*	3.00*	3.30

YELLOW STAINED

G.M	1.50*	1.75*	1.50*	1.50*	1.58*
S.M.**	2.25*	2.50*	2.50*	2.50*	2.40*
M.**	3.00*	3.25*	3.50*	3.50*	3.23*

BLUE STAINED

G.M.**	1.75*	2.00*	1.75*	1.75*	1.75*
S.M.**	2.25*	2.75*	2.75*	2.75*	2.48*
M.**	3.00*	3.25*	3.75*	3.75*	3.75*

**(Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.30 –$0.31	¾ blood.....	$0.29 –$0.30
Fine clthg ..	.24 – .25	¼ blood.....	.29 – .30
½ blood.....	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.73 –$0.75
California, Northern	.63 – .65

PULLED—EASTERN (CLEAN BASIS)

AA.....	$0.72 –$0.75	B-Super...	$0.50 –$0.58
A-Super....	.63 – .65	C-Super...	.47 – .50

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.73 –$0.75
Staple ½ bld.	.68 – .70
Fine and fine medium	.68 – .70
¾ blood	.58 – .60
¼ blood	.56 – .58

MOHAIR—DOMESTIC

Best Carding	$0.32 –$0.35
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.23 –$0.25
Cape firsts	.25 – .28

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.6 –$0.65
64s	.48 – .50
58s-60s	.42 – .45
(IN GREASE)	
Montevideo:	
58s-60s	$0.21 –$0.22
56s	.20 – .21
50s	.18 – .19
Buenos Aires:	
4s, 40-44s	$0.15 –$0.16
5s, 36-40s	.15 .16

FOREIGN CARPET (GREASE BASIS IN BOND) SCOURED

Aleppo	$0.25 –$0.26
China: Combing No. 1	.14½– .15
China Filling Fleece	.13 – .14
Szechuen ass't	.14 – .14½
Cordova	.13 – .14
Scotch black face	.14 – .15
East India: Kandahar	.20 – .22
Vican'r	.24 – .26
Joria	.23 – .25

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.87½– .90
2-24s 40s	.97½–1.00
2-26s 44s	1.05 –1.07½
2-28s 46s	1.10 –1.12½
2-30s 48s	1.15 –1.17½
2-32s 50s	1.20 –1.25
(Single yarns 5c. less than above)	
2-36s, 58s	$1.32½–1.35
2-40s, 60s	1.40 –1.45
2-40s, 64s	1.45 –1.50
2-50s, 66s	1.60 –1.65
2-60s, 70s	1.95 –2.00

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.90
2-20s, 48s in oil	– .95
2-20s, 50s in oil	–1.00
2-20s, 56s in oil	–1.10
2-20s, 60s in oil	–1.27½
2-20s, 64s in oil	1.32 –1.35
1-15s, 46s dyed	1.10 –1.12½
1-15s, 48s dyed	1.12½–1.15
1-15s, 50s dyed	1.15 –1.17

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.17½–$1.20
1-20s, 60s	1.22½– 1.25
1-18s, 64s, Dyed	1.50 – 1.52½
1-26s, 64s	1.25½– 1.27½
1-30s, 60s, Warp	1.32½– 1.35
1-30s, 64s, Warp	1.37½– 1.40
2-30s, 64s, Fancy mixes	1.67½– 1.70
2-40s, 64s, Zephyrs	1.55 – 1.60
1-50s, 66s	1.60 – 1.62½
2-50s, 66s	1.77½– 1.80
1-60s, 70s	1.95 – 2.00
2-60s, 70s	2.10 – 2.15

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.00 –$1.02½
1-40s, 50-50-60s on cops	1.15 – 1.17½
1-40s, 50-50-64s on cops	1.17½– 1.20
1-40s, 50-50-64s Australian cops	1.25 – 1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.95–$0.97
Half-blood (60-62s)	.88– .90
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.78– .80
Low ¾ blood	.73– .75
High ¼ blood (50s)	.70– .72
46s S. A. and N. Z	.60– .63
44s S. A. and N. Z	.58– .60
40s S. A. and N. Z	.58– .60

TOPS—BRADFORD, ENG. (NOV. 8)

Fine (70s)	29 d	¾ bld. (56s)	16½d
Fine (64s)	25 d	½ bld. (50s)	14 d
½ bld. (60s)	22½d	Cross-bred (46s)	11½d
¾ bld. low (58s)	19½d		

NOILS—BOSTON

Fine	$0.51–$0.53	High ¼ bld..	$0.42–$0.45
Half-bld.	.48– .52	Low noils...	.35– .38
Aver. ¾ bld..	.45– .48	Medium colored...	.35– .37
Fine colored.	.43– .45		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.73 –$0.75
Lap, fine colored	.56 – .58
Hard ends, fine white	.60 – .62
Hard ends, ¼ blood white	.38 – .42
Hard ends, fine colored	.25 – .28
Hard ends, medium colored	.20 – .22
Card, fine white	.28 – .30
Burr, fine Carbonizing	.33 – .35

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06 –$0.07
Merinos, Fine Dark	.04½– .05
Merinos, Fine Light	.13 – .14
Serges, Blue	.06½– .07
Serges, Black	.07 – .07½
Serges, Red	.10½– .11
Knit, White	.23 – .24
Knit, red	.15 – .16
Knit, Light Hoods	.14 – .15
Worsted, Light	.05½– .06
Worsted, Blue	.07½– .08
Worsted, Black	.07½– .08

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%.	$4.25
Japan organzine, 2 thd. sp. crack. sk. 81%	3.85
Japan crepe, 3 thd. gd. XX bob. 83%	4.05
Japan crepe, 3 thd. sp. crack. bob. 81%	3.80
Japan crepe, 4 thd. crack bobbins, 78%	3.70
Japan grenadine, 4 thd. sp. grand singles, 87%	5.75
Japan grenadine 4 thd. 85%	5.50
Japan grenadine 3 thd. 90%	6.90
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.85
Hosiery tram, 3 thd. Japan 90%	4.90
Hosiery tram, 5 thd. Japan, 85%	3.95
Hosiery tram, crack XX 78%	3.45

SPUN SILK YARNS (Terms: net 30)

40/2	$3.35	60/2	$3.65
50/2	3.55	62/1	2.50

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.10	$2.65	$2.75
Special Grand, 85%	2.80	2.65	2.75
Grand XX, 83%	2.65	2.55	2.65
Special Crack, 81%	2.55	2.45	2.55
Crack XX, 78%	2.45	2.40	2.40
Extra Extra, 73%	2.30	2.30	2.30
Best Extra, 68%	2.25	2.20	2.25

Canton filature, new style, 14/16	$1.85
Canton filature, new style, 20/22	1.75
Tussah filature, 8 cocoon	1.33

NATIONAL RAW SILK EXCHANGE

	Close Nov. 5	For the Week High	Low	Close Nov. 11	Net Chge.
November	2.31	2.35	2.25	2.25	—.06
December	2.27	2.27	2.23	2.25	—.02
January	2.23	2.23	2.19	2.22	—.01
February	2.23	2.23	2.18	2.22	—.01
March	2.23	2.23	2.18	2.22	—.01
April	2.22	2.25	2.17	2.20	—.02
May	2.22	2.25	2.17	2.20	—.02
June	2.22	2.23	2.17	2.20	—.02

Nov. 5 to Nov. 11—Total contracts, 430. Total number of bales, 4,300. Total approximate value, $10,965.00. Trading unit is Crack XX 13-15, white, 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18	1.60	1.50
75	30	1.70	1.60
100	18	1.25	1.15
100	40	1.30	1.20
125	36–50	1.20	1.10
150	24–30	.95	.90
150	36–40	1.00	.95
150	60	1.15	1.10
150	75–90	1.20	1.15
170	24–27	.95	.90
170	60	1.15	1.10
200	30	.90	.85
200	35–40	.90	.85
200	75–80	1.10	1.05
300	44–60	.78	.75
450	54–60	.78	.75
600	72–96	.78	.75
900	100–144	.78	.75

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.60	$1.50	150	$0.95	$0.90
100	1.25	1.15	175	.95	.90
125	1.20	1.10			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.40
40	30	2.40	120	90	1.30
52	30	2.20	150	112	1.25
			180	135	1.10

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.15
Open unbleached waste	...– .13
Bleached thread waste (mfs.)	...– .11
Bleached thread waste (misc.)	...– .09
Colored thread waste	...– .08
Colored clips	...– .07

CONVERTED RAYON WASTE

Bleached tops	–$0.45
Unbleached tops	...– .40
Bleached noils	...– .15
Bleached garnetts	...– .16
Unbleached garnetts	...– .15
Colored garnetts	...– .13

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

SMART stockings of sheer beauty... no line or twist of seam... shaped in the knitting on the new Model K machine.

For summer sport and winter formal wear, these new stockings without seams ... snugly fitted at the ankle ... smooth foot and narrowed Gussetoe ... are today's so much more graceful mode.

No seam to twist or mar the sheer.

The "Gussetoe"... the smooth, fitted foot... with no seam or ridge.

Established 1865

SCOTT & WILLIAMS

Incorporated

366 Broadway
New York, N. Y.

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. pfd.	50	52	56
Amoskeag	7¼	...	...
Arlington	18¾	19½	21½
Associated Textile	36½	34	37
Bates	64	63	66
Berkshire, Associates, com.	8½	7	9
Berkshire Associates, pfd.	72	52	55
Bigelow-Sanford, com.	33	...	...
Boott Mills	120¼	...	112
Edwards	80¼	63	65
Esmond, pfd.	102	100	102
Farr Alpaca	70½	68	71
Hamilton Woolen	40	34	37
Hill	18	14	18
Indian Orchard	20½	20	25
Ludlow	124	120	124
Merrimack, com.	45½	44	48
Nashua, com.	12½	13	15
Nashua, pfd.	66	58	63
Naumkeag	84	80	83
Newmarket	15	13	16
Otis	43	47	51
Pacific	18	...	...
Pepperell	85	83	86
Plymouth Cordage	70½	61	65
York	8½	5½	8

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Nov. 12:

	High	Low	Last Sale	Net Chge.
Adams Millis	22	21¾	21¾	— ¼
*American Thread, pfd.	3½	3½	3½	....
American Woolen	7	6	6½	—1½
American Woolen, pfd.	18½	16½	17½	—1½
*Assoc. Rayon, pfd.	46	40	41	—8½
Belding-Hemingway	3½	3	3	— ½
Botany Mills, A	3	2½	2½	+ ½
Cannon Mills	20	18½	18½	—1½
Century Ribbon	3¼	3¼	3¼	— ¼
Collins & Aikman	13	12	12	—1
Consolidated Textile	¾	½	½	....
*Courtaulds, Ltd.	10¼	10¼	10¼	....
Duplan Silk	15	15	15	+ ¼
Durham Hosiery, pfd.	23	23	23	....
*Fabrics Finishing	½	½	½	— ½
Gotham Hosiery	7¼	6½	6½	— ¼
Industrial Rayon	58	47	52	+6
Kayser, Julius	19¼	16¼	17½	—1
Kendall, pfd.	40	36¼	36½	—1½
Mallinson	4	3	3	—1
Mohawk Carpet	13½	11½	12	—1
Munsingwear	35	34½	34	—1
Pacific Mills	19¾	18½	18½	— ¼
*Pepperell	84	83½	83½	—1½
Phoenix Hosiery	9	8	8	—2½
*Propper-McCallum	5	4½	4½	— ½
Real Silk Hosiery	35½	30½	31½	—3½
*Tubize Chat B	4½	4	4½	+ ¼
United Piece Dye Works	25¼	23½	25¼	+1¼
Van Raalte	7	7	7	—1

*Listed on Curb.

Textile Calendar

Wool industry meeting under auspices of Wool Institute, Hotel Roosevelt, New York, Nov. 19, 1930.

The Textile Forum, N.A.C.M., overseers of carding, Boston (Mass.) Chamber of Commerce, Nov. 18, 1930.

Cotton Manufacturers Association of North Carolina, Fall Meeting, Carolina Hotel, Pinehurst, N. C., Nov. 21 and 22, 1930.

Canadian Woolen & Knit Goods Manufacturers Association, Annual Meeting, Toronto, Canada, Nov. 28, 1930.

Ninth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City, Dec. 1 to 6, 1930.

American Association of Textile Chemists and Colorists, Annual Meeting, Chattanooga, Tenn., Dec. 5-6, 1930.

The Textile Forum, N.A.C.M., overseers of spinning, Boston (Mass.) Chamber of Commerce, Dec. 9, 1930.

The Textile Forum, N.A.C.M., master mechanics, Boston (Mass.) Chamber of Commerce, Jan. 13, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

"Arkwrights" to Broaden Research Program

PLANS for a broad and constructive program of research work were announced by the Arkwrights, Inc., following a meeting of their board of directors in Charlotte, N. C., Nov. 11.

New qualifications for membership, a revised classification of members and the establishment of a research laboratory were provided for in amendments to the organization's by-laws. Officers of the Arkwrights will continue, as follows: Marshall Dilling, Gastonia, N. C., president; Carl R. Harris, Durham, N. C., vice-president, and Walter C. Taylor, Charlotte, N. C., secretary.

The definite aims and purposes of the organization as revealed in the new plans made public this week, include the following important points:

Membership: Active members will be those who have completed tests that have been accepted by the research committee; associate members will be those who are already members of the Arkwrights but who have not completed the prescribed tests, and others whose applications have received approval of the membership committee, except those under 30 years of age who shall be classified as junior members. Corporate membership shall consist of any concern engaged in the textile or allied industries, while contributing members shall consist of textile manufacturing companies.

Research Program: Funds should be provided to enable the Arkwrights to carry on a research program that would be of great value to the textile industry as a whole, but particularly in the South. It is intended to have a contact man who will visit individuals and mills acquainting them with the organization's research work, and to assist in conducting tests. An adequate library and a well equipped laboratory are both contemplated in the program.

Testing for Mills: The laboratory would provide means of performing special tests and fabric analyses for textile mills, and of conducting special research for southern manufacturers. Suggested problems for study include: the percentage of correct staple in various lengths of cotton being used, the moisture content of cotton, the evenness, elasticity and strength of yarns with the idea of setting up an Arkwright standard for the minimum qualifications of various yarns.

Reports: In order to keep members in touch with the work of the Arkwrights, it is planned to issue monthly, or at such other times as necessary, pamphlets outlining the progress of the organization's activities. This publication might eventually be placed on a self-supporting or even a profitable basis.

Wool Institute Sponsoring Style Show

Women's wear division of the Wool Institute, Inc., will hold a fashion show at the Statler Hotel, Boston, Dec. 8 and 9. It will be held in conjunction with the American Farm Bureau Federation, which has a membership of 5,000,000, giving woolen and worsted manufacturers a large potential market for their new lines which will be featured at the Boston exhibit.

Botany Stages Fashion Show

An elaborate fashion show was the method taken by Botany Worsted Mills to open their lines of woolens and worsteds for spring wear. The showing was at the New York offices of the firm at 200 Fifth Ave., and was most complete. Many of the materials shown are of sheerest weights, the lightest being in neighborhood of 5 oz.

Ratine and other nubby effects had a prominent place in the materials displayed which were adaptable for dress goods or coating uses.

Frenchmen Visit Institute

The group of French manufacturers visited The Cotton-Textile Institute Nov. 10 where the outstanding activities of the cotton manufacturing industry in the United States were explained.

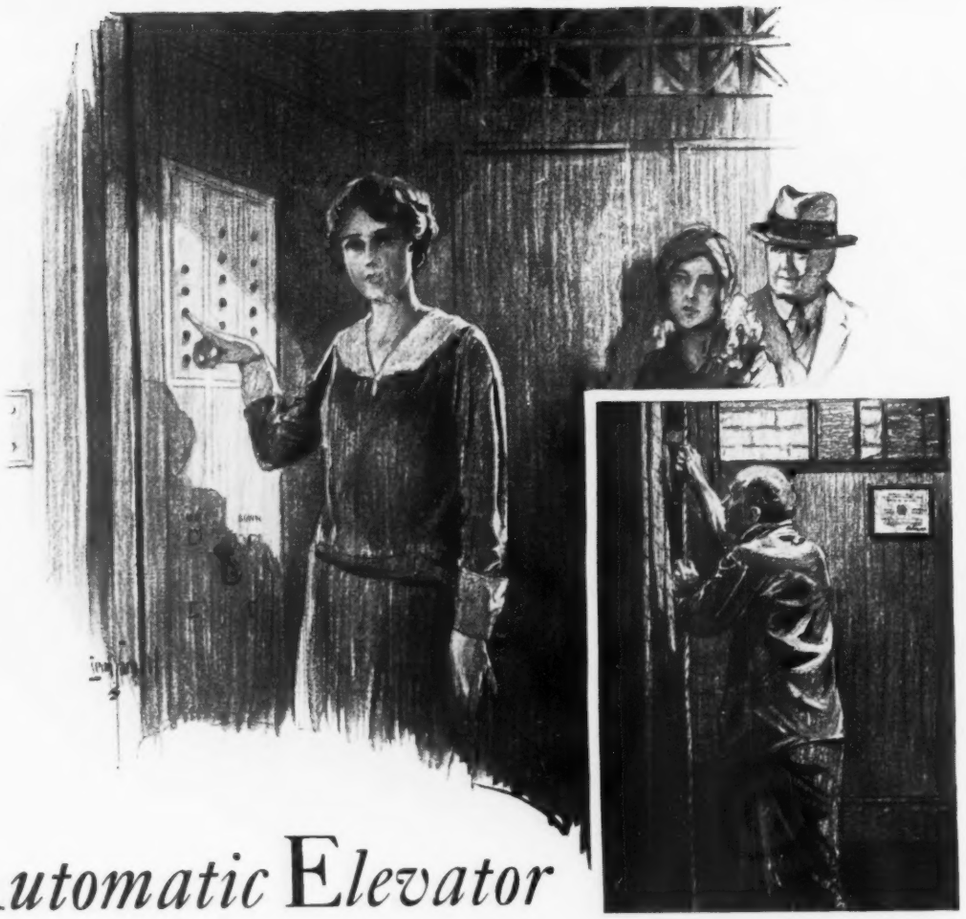
George A. Sloan, president of the Institute, welcomed the delegation and made a short address in which he outlined the history of the association and its major activities. He said, "America is grateful to France for the beautiful designs created by French artists that are always our inspiration."

He also called attention to the helpful interest of Paris couture in styling and designing cotton garments, which he termed as important in the success of style efforts this year in United States.

S. Robert Glassford, president of the Association of Cotton Textile Merchants of New York and Floyd W. Jefferson, president of the Textile Export Association of the United States, were present and spoke briefly to the visitors.

Celanese Show Features Tricot Knit Bathing Suits

A group of tricot bathing-suits, in smart 1931 color combinations was among the highlights of a Southern Resort Fashion Show held by the Celanese Corp. of America at its New York showrooms Wednesday afternoon. The event was attended by about 200 representative stylists and retail piece goods and garment buyers. The showing included four groups—beach, pavilion, club and evening apparel.



THE NEW WAY

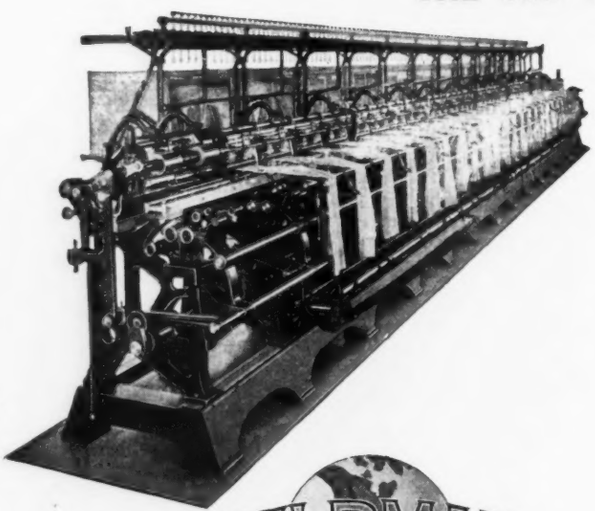
THE OLD WAY

Like the Control of the Modern Automatic Elevator

The new slow-motion mechanism in the Wildman Full-Fashioned Hosiery Machine is operated by the touch of a lever. As different from the old style as is the operation of the new automatic elevators.

It does away completely with the strong arm work formerly necessary in stopping and turning.

Write for further information.



WILDMAN MFG. CO.
Full-Fashioned Division
Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

WILDMAN
FULL-FASHIONED HOSIERY MACHINE

Important Wool Industry Meeting

An important meeting for the wool industry is scheduled for Nov. 19 at Hotel Roosevelt, New York. These manufacturers will at that time decide what form of cooperation they desire and take definite steps to make the recommendations effective.

L. A. Hird, of Samuel Hird & Sons, New York, is chairman of a committee which has been giving consideration to the problems of the wool industry and according to a notice sent to the trade, this group is prepared to make definite suggestions at the Nov. 19 meeting.

The committee states that the meeting will be conducted by the men of the industry and each one is expected to express his own opinions as to what can be done to work out a method of procedure which "will enable this industry to operate on a permanently prosperous basis."

It is felt the industry is prepared to consider its future from a broader and more intelligent viewpoint than it has ever done in the past. Since the resignation of A. D. Whiteside, effective the end of this year, as head of the Wool Institute, there has been some doubt among manufacturers and spinners what action this group would take in connection with their 1931 activities.

It is expected that the meeting called will settle all such questions and indications are that manufacturers and spinners will decide to not only continue generally along the same lines as the Institute has proceeded under the guidance of Mr. Whiteside, but these activities will be strengthened and broadened along lines that have been found most effective in other sections of the industry. The committees follow:

Weaving Division Committee: R. Leland Keeney, Marland C. Hobbs, W. L. Hayward, Allen R. Mitchell, Jr., Merle Bell, H. M. Ashby, F. W. Tipper, L. Bachmann, Philip Kunhardt, Eben Whitman, A. C. Buckley, W. V. E. Terhune and L. A. Hird.

Spinning Division Committee: Col. C. F. H. Johnson, A. H. Stursberg, L. B. Whitby, C. E. Dearnley, A. T. Eastwick, Frank J. Payan, Arthur Harding, Wm. R. Cordingley, Ames Stevens, John Fisler and Fred Wolstenholme.

Webb Again Heads Philadelphia Wool Group

PHILADELPHIA.—Textiles are leading the country out of the valley of depression. Wool is reasonably priced and in many instances low enough to be almost ridiculous. These statements were made by Herbert K. Webb, Chas. J. Webb & Sons Co., in the address accepting presidency of the Philadelphia Wool & Textile Association for the third time. Election was held Nov. 7.

C. E. Doan, C. E. Doan & Co., and Joseph Lord, Chas. J. Webb & Sons Co., were elected vice-presidents; J. Ellwood Moore, Wm. F. Allen & Co., was chosen treasurer, and Frank D. Levering of Eavenson & Levering Co., secretary.

The executive committee consists of the above and the following: chairman, Wm. H. Whiting, Wm. H. Whiting & Co., T. B. Hayward, Swift & Co., D. Webster Bell, Henderson & Co., Howland Bottomley, Howland Croft & Co., Herbert Heston, John H. Horstmann, Horstmann & Co., George C. Shelly, Jas. G. Kitchen & Co.

Mr. Webb stated that wool with its duty of 34c. was cheaper than for many years, from which it is reasonable to predict that the turning point in the wool business is at hand.

Reading F-F. Union Calls Strike Meeting

READING, PA.—The question of whether the American Federation of Full-Fashioned Hosiery Workers will call a strike of all full-fashioned hosiery workers in this district, may be decided tomorrow (Nov. 16). A meeting of the workers will be held in Orpheum Theater, and union leaders say they look for some definite action to be forthcoming at the meeting. These leaders claim that wage cuts ranging from 8 to 35% have been made by hosiery mills in the district in the last two weeks, adding that this makes a total cut of from 20 to 40% throughout the current year. The union through Edward F. Callaghan, general representative, is circulating the public in the district, asking for support. A meeting was held last Sunday at which 1,500 persons adopted resolutions empowering the union officials to call a strike, providing a general meeting was held first; the meeting arranged for complies with this requirement.

The strike issue is understood to have been precipitated by the recent announcement that Berkshire Knitting Mills would cut wages. The situation is being watched very closely by the Full Fashioned Hosiery Manufacturers of America, as the members of that organition consider that it bears direct relation to the question of continuing the uniform wage scale adopted last year.

Export Association Elects

Floyd W. Jefferson, Iselin-Jefferson Co., was elected president of the Textile Export Association of the United States at a meeting held in New York Nov. 7. A. G. Kempf, Neuss, Hesslein & Co., Inc., was elected vice-president and F. A. Colt, of The Cotton-Textile Institute, Inc., secretary, to succeed Perry S. Newhall, who resigned as secretary, but will continue as treasurer of the group.

These officers will serve until the annual meeting of the association to be held in May, 1931, and the following were elected to serve with the president and vice-president as members of the executive committee: Walter S. Brewster, Pacific Mills; S. Robert Glassford, Bliss, Fabyan & Co., Inc., and Henry Lauten, Prince Lauten Corp.

Six new concerns are now represented in the membership, bringing the total up to 43. The new members are Tilton & Keller, Inc., Wm. Anderson Textile Mfg. Co., Inc., N. Fluegelman & Co., Paulson, Linkroum & Co., E. F. Leveen & Co., and E. Mosheim & Co., Inc.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Nov. 8, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, are as follows:

	Week Ended Nov. 8	Total to Date 1930	Total to Date 1929
Domestic	2,022,000	337,063,000	196,381,000
Foreign	335,000	55,752,000	88,367,000
Total	2,357,000	392,815,000	284,748,000
IMPORTS AT PRINCIPAL PORTS			
Boston	335,000	55,752,000	88,367,000
Philadelphia	504,000	39,850,000	77,268,000
New York	482,000	38,863,000	64,681,000
Total	1,321,000	134,465,000	230,316,000

Wall covering made of backfilled rayon-warp fabric. The rayon is made by the Viscose Co.; the wall covering by H. B. Wiggins' Sons Co. On right is a typical pattern, much reduced; on left a detail about true size.

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THE quickest and most economical way to get into production on new merchandise, is to send for the Brinton representative. Brinton makes circular Knitting machines of all kinds, for every purpose. Brinton engineers will help you select the precise Knitting machine you need—or will make it for you if necessary.

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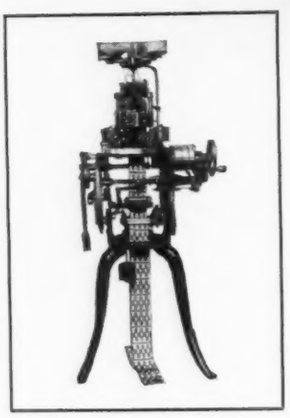
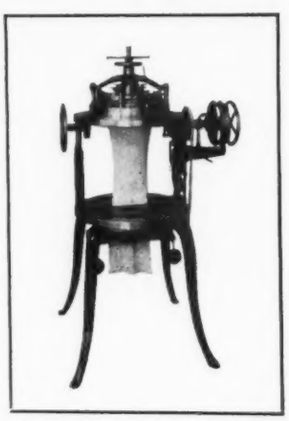


Trick Wheel Ribber



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Textile Equipment Manufacturers Propose Standards

UNDER the auspices of the Department of Commerce, a group of representatives of textile-equipment manufacturing concerns met on Nov. 12 at the Hotel Astor, New York. The meeting was presided over by George Schuster, of the Division of Simplified Practice, Bureau of Standards. The purpose of the meeting was to hear progress reports from various committees which are drawing up recommendations for standardizing the dimensions and construction of cones, tubes, quills, cops, spools, and spindles. The discussion was led by E. H. Vaughn, Universal Winding Co., Providence, R. I., who is in charge of the compilation work.

The first topic discussed was the weight of paper in cones to be used for acetate yarn. The three weights recommended for adoption as standards were 55 lb. per thousand for dry winding, and 85 lb. and 115 lb. for wet winding. The committee submitted blue prints showing its recommendations for sizes and shapes of cones. In discussing parallel tubes, it was recommended that the length of yarn traverse be specified, and it was pointed out that the number of sizes could probably be reduced to four, allowing several weights for each size.

Blue prints were submitted showing the type of base wooden cone without trimmings recommended for adoption. Representatives of wooden cone manufacturers urged that an attempt be made to standardize the form of groove used on the outside of the cones. It was pointed out that the number of styles could be reduced from about 200 to 6, thereby making it possible for manufacturers to supply cones from stock. Similar recommendations were made for wooden filling bobbins, and it was stated that some 7,000 styles have been used at various times in this line. To date, however, only the sizes of holes in wooden filling bobbins have been considered by the committee. The committee was urged to attempt standardization of the rings for bobbins intended for use in automatic looms. Particular emphasis was placed upon the necessity for standardizing bobbin lengths. Following recommendations from the bobbin manufacturers, it was agreed that standardization of spindle sizes should precede that of bobbin sizes.

A complete report recommending standard dimensions for woolen spinning bobbins was presented by Alfred C. Jensen, Davis & Furber Machine Co., North Andover, Mass. He recommended four lengths for warp and filling bobbins and one comparatively heavy spindle top. Mr. Jensen's report was highly approved by the bobbin manufacturers, and the hope was expressed that a similar study can be made in cotton spinning.

A new committee was established for studying the standardization of silk spools, under the chairmanship of Grant Sipp, vice-president, Sipp-Eastwood Co., Paterson, N. J.

It is hoped that all committee work will be completed by spring, at which time it is proposed to hold a general meeting of equipment manufacturers and mill men to see whether the proposed standards will prove generally acceptable. Copies of the recommendations will be sent to all interested in time for study previous to the holding of the general meeting.

The meeting at the Hotel Astor was attended by the following:

H. A. Cadle, Foster Machine Co., Westfield, Mass.; J. L. Coker, III, Sonoco Products Co., Hartsville, S. C.; E. H. Erhard, vice-president, Stafford Co., Readville, Mass.; H. C. French, sales manager, U. S. Bobbin & Shuttle Co., Manchester, N. H.; W. H. Harriman, engineering department, Universal Winding Co., Providence, R. I.; A. C. Jensen, Davis & Furber Machine Co., North Andover, Mass.; S. T. Packard, general manager, Dana S. Courtney Co., Chicopee, Mass.; C. P. Park, general works manager, U. S. Bobbin & Shuttle Co., Manchester, N. H.; G. Sipp, vice-president, Sipp-Eastwood Co., Paterson, N. J.; and E. H. Vaughn, engineering department, Universal Winding Co., Providence, R. I.

pH—What It Means

(Continued from page 38)

matter of wetting-out and emulsifying the wool grease present. Without doubt there is an optimum pH and temperature at which this emulsion is most readily formed and is most stable. Unfortunately, at high alkalinities and temperatures the wool is badly damaged, so that the optimum pH and temperature for the emulsification of the wool grease cannot be used in scouring. But by means of pH control it is possible to hold this degree of chemical activity at any desired point, so as to obtain the maximum scouring effect with the least possible injury to the fiber.

In the bleaching of cotton by means of either sodium or calcium hypochlorite or hydrogen peroxide, and in the bleaching of wool and silk with hydrogen peroxide, hydrogen-ion control is important, in that, together with temperature, time, and concentration of the bleaching bath, it largely controls the results obtained. It is well recognized that the stability of the hypochlorite bleaching bath is usually less on the acid side of neutrality than on the alkaline side. In the case of hydrogen peroxide, the reverse is the case, the acid solution being more stable than the alkaline solution. In this way the pH and temperature factors largely control the speed of the normal bleaching and degree of injury to material.

It has long been known that in the dyeing of both wool and silk, the pH of the dye bath may be just as important, as regards the amount of dyestuff taken up by the fiber, as the temperature. This applies to the application of both acid and basic dyestuffs to these fibers, although it is, of course, understood that the optimum pH varies with the two different classes of dyes.

On the other hand, in the dyeing of the cellulose fibers—cotton, mercerized cotton, and the rayons—pH control has not been considered as very important. It is only recently that this subject has been investigated, and it has been found that here too the pH of the dyebath is important where it is desired to obtain the deepest shade with the least quantity of dyestuff and in the shortest time. It is undoubtedly also important where it is desirable to dye by formula as much as possible, rather than by rule-of-thumb methods.

In the application of the vat dyestuffs to cotton, where the final shade is not usually obtained until after the actual dyeing operation is finished and the color oxidized and soaped on the fiber, pH control is again important, especially in the dyeing of piece goods by the continuous process. In the application of the vat dyestuffs to silk and wool, which is gradually becoming more popular, pH control is doubly important in that it not only more or less controls the depth of shade obtained, but it also minimizes the injury to the fiber by the alkaline solution.

In the preparation of sizing, printing, and finishing pastes, pH control is also important, since it not only controls the effect of the reagents upon the starch, but to some extent affects the viscosity of the starch pastes and so controls the amount of starch taken up by the goods. In the desizing of cotton and rayon materials, by either the enzyme or acid-steeping process, the control of pH is usually important. Other applications are in scouring, souring, carbonizing, mordanting and mercerizing. Again, in waterproofing and mildewproofing, in water purification and sewage disposal, and in many other textile processes, the determination and control of hydrogen-ion concentration is finding a definite place.

Many textile men have felt that pH control is impractical, but it is just as practical as they are capable of making it. In many instances of plant control it is not necessary to have a high degree of accuracy, such as may be required for laboratory investigations. Therefore simpler and less complicated methods and apparatus can be used for plant determination than are used for laboratory works. The fact that pH control is widely and successfully used in many other industries, as well as in some of the most progressive and successful textile plants, proves that it is practical and of value.

Viscose Acetate Yarn Prices

The Viscose Co. announces the following prices on Seraceta, the company's first cellulose acetate yarn, now gradually getting into production at the Meadville, Pa., plant. The yarn is also supplied in warp form, on which the makers quote on application.

Den.	Fil.		Spools	Caps	Cones
75	20	.....	$1.80	$1.90	$1.90
100	28	.....	1.65	1.75	1.75
150	36	.....	1.30	1.35	1.40

Any old iron

that's costing you money to operate?

"Old iron" is a brutal name for equipment which you regard as the major item of your business but—machinery that was an asset in 1920 may be a liability today. In the last few years obsolete machinery has demonstrated to scores of mills that in the Full-Fashioned Hosiery business it is necessary to choose between modernization and oblivion.

Mills that are still trying to *get along* with equipment that should be scrapped as "old iron" will soon find that profits are possible only with machines whose operating costs are in keeping with the production economies of today.

TEXTILE MACHINE WORKS, READING, PA.

The "READING"
Full-Fashioned Knitting Machine

Business News

Carrier in Huge Air-Conditioning Merger

The Carrier Engineering Corp. of Newark, N. J., widely known in the textile industry as a result of the use of its air conditioning systems in numerous mills, will merge with the Brunswick-Kroeschell Co., makers of refrigeration systems, and the York Heating & Ventilating Corp. Including subsidiary and affiliated companies, the merger will unite 15 concerns, five of

Willis H. Carrier, president Carrier Engineering Corp.

them foreign, with total assets of approximately $15,000,000. All of the companies involved will retain separate entities under a holding company to be known as the Carrier Corp.

"The consolidation will provide a single world-wide organization equipped to provide any desired kind of indoor atmospheric conditions in homes, hotels and apartment houses, stores, theaters, office buildings and industrial plants," J. I. Lyle, executive vice-president, stated.

The Carrier Engineering Corp. was founded in 1914 by Willis H. Carrier, J. I. Lyle, and E. T. Murphy, who is vice-president in charge of sales. Carrier systems of "manufactured weather" have been installed in the Capitol at Washington, the White House Executive Offices, and innumerable industrial plants, theaters and department stores.

The Brunswick-Kroeschell Co. has plants in New Brunswick, N. J., and Chicago, and maintains a complete line of commercial refrigerating machines for every cooling or freezing requirement. J. W. Johnson is president and Sydney B. Carpender is vice-president and general manager.

The York Heating & Ventilating Corp. is a Philadelphia concern with plant at Bridgeport, Pa. It developed unit heaters and coolers now widely used in all kinds of industrial plants. The company also originated the unit method of air conditioning. The principal officers are Thornton Lewis, president; H. P. Gant, vice-president in charge of sales, and Donald E. French, vice-president in charge of production. Mr. Lewis and Mr. Gant are both former presidents of the American Society of Heating and Ventilating Engineers, as also is J. I. Lyle.

Chemical Salesmen Meet

The Chemical Salesmen's Association met on Thursday, Nov. 13 at the Drug & Chemical Club, New York, and selected the nominating committee which will pick the slate of officers for the coming year. Captain Unmacht of the Chemical Warfare Service gave a talk illustrated with moving pictures. Colonel Exton also spoke.

Crawford Takes Over Needle Co. and Opens New York Office

The full management of the New Brunswick (N. J.) Needle Co., manufacturers of spring beard needles, sinkers, slides, jacks, etc., has been taken over by the Crawford Mfg. Co., New Brunswick, N. J. Crawford has furnished stop motions to the knitting trade for 40 years. The entire organization of the needle company, with the exception of Frank Ziegler, has been retained.

The Crawford Mfg. Co. has opened a New York office at 366 Broadway, where a complete stock of replacement parts of the company's various types of stop-motions will be carried. The office will be in charge of Frank Crawford, Jr.

S. R. Moore Joins Steel Heddle Co.

Stephen R. Moore, former instructor of weaving at the New Bedford Textile School, has joined the sales staff of the Steel Heddle Mfg. Co., Philadelphia, it is announced. Mr. Moore will work with the firm's other specialists in solving problems presented to them on harness equipment, with the aim of cutting costs and eliminating seconds.

B. D. Spofford With Duriron

B. D. Spofford, formerly advertising manager of the Waco Aircraft Co., has joined the Duriron Co., Inc., Dayton, Ohio, as advertising and publicity manager, as of Nov. 1.

New Books

A.S.T.M. Specifications and Methods of Test for Textile Materials, 1930; prepared by Committee D-13 on Textile Materials, Philadelphia, Pa.

The American Society for Testing Materials, through its Committee D-13 on Textile Materials, has recently published this pamphlet which embodies specifications covering a wide range of textile materials. It contains tolerances and test methods for cotton yarn and sewing threads, light and medium weight cotton fabrics, tire fabrics and tire cord, electrical silk and cotton tapes, asbestos yarn and tape, rayon, knit goods; tolerance for numbered cotton duck, hose and belt ducks, tire cord; methods of testing woven fabrics; specifications for testing machines, chafer tire fabrics, cement sacks, sugar bags; and definitions of terms relating to textile materials.

King Cotton Is Sick—By Claudius T. Murchison. Published by the University of North Carolina Press, Chapel Hill, N. C. 187 pp. $2. Sold by Arthur R. Womrath, Inc., New York.

An interesting analysis of the cotton textile industry's structure, emphasizing the conflicting tendencies existing among the various functional groups and clearly indicating the hazards involved in the manufacture, merchandising and distribution of cotton fabrics and materials. Conclusions are supported by statistics and examples which are presented in a readable manner. After evaluating the factors influencing the economic status of the industry, the author finally offers a solution of the problem in the form of vertical mergers or combinations, each major unit bringing together all the processes—spinning, weaving, converting and selling—"under a single unified control" that "will supply a continuity of supervision all the way from the spinning process to the final disposition of finished fabrics." Preliminary horizontal combinations of many small mills must precede final consummation.

Obituary

Joseph R. Leeson

Joseph Robertson Leeson, philanthropist, textile expert and founder of the Universal Winding Co., of Providence, R. I., died of pneumonia in London, England, on Nov. 8. Mr. Leeson was 86 years old and until five years ago was president of the Universal Winding Co., Boston. At that time he retired and became chairman of the board of directors, leaving later for London to assume charge of the company's foreign business.

He was born in London, July 8, 1844, and came to the United States as a young man, becoming a citizen of this country. He first engaged in the making of linen thread, forming the firm of J. R. Leeson & Co. The Leeson firm later became part of the Linen Thread Co., Ltd., of Glasgow.

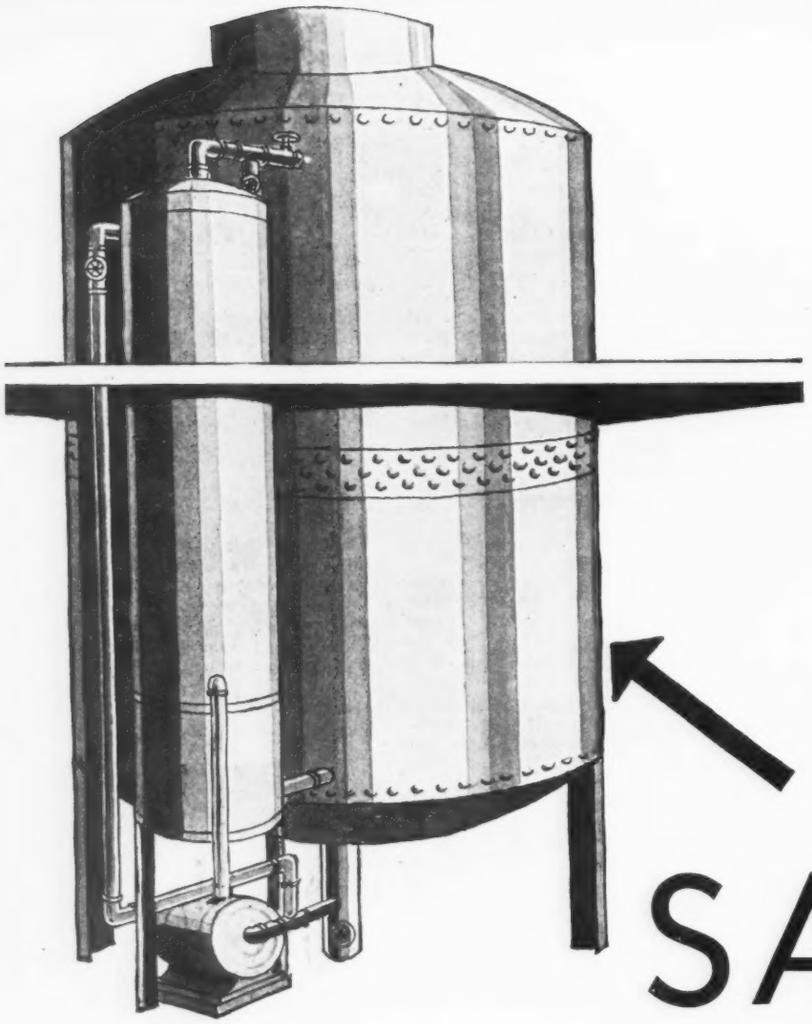
Later Mr. Leeson sold his interest in this firm and organized the Universal Winding Co., manufacturing winding ma-

Joseph R. Leeson

chinery under the brand "Leesona," which is sold and used in all parts of the world. He was president and owned the controlling interest until his retirement. His son, Robert A. Leeson, is now president. Mr. Leeson lived for many years in Newton, Mass., where he was president of the Boston Merchants' Association and served on the Governor's Council in 1893 and 1894. He was a member of the Massachusetts State Board of Docks and Terminal Facilities and was president of the Newton Hospital. Besides his son, four grandchildren survive.

Gen. T. Coleman du Pont

Gen. T. Coleman du Pont, former president of E. I. du Pont de Nemours & Co., Inc., of which du Pont Rayon Co. is a subsidiary, died Nov. 11 at his home in Wilmington, Del. He was 66 years old, and had been ill for some time. He took the presidency of the du Pont firm in 1902 when its chief product was gun powder, and he held that post until 1915 when he sold his interest. Subsequently the du Pont interests branched extensively into industrial chemicals dyestuffs, textiles and various compositions.



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R&H CHEMICALS

Varied Twill Effects Used in Narrow Fabrics

(Continued from page 45)

A is shown the regular four-up-three-down twill. At *B* is shown the same twill arranged to read one-up-three-down-three-up. At *C* is illustrated the combination of *A* and *B*, which reads four-up-three-down corkscrew weave, two repeats high and four repeats wide.

Fig. 48 illustrates a narrow fabric embodying the six-up-six-down corkscrew weave. Here the odd-numbered ends are of one color; and the even-numbered ends, of a contrasting color.

Fig. 49 shows the combination of the seven-up-two-down twill and the three-up-six-down twill. The design is two repeats each way.

As in the case of rib weaves, added strength may be lent to fabrics constructed of corkscrew weaves derived from loose twills, by incorporating additional raisers on the floats forming the back of the material. This treatment, however, sacrifices the reversible feature of the weave. Stitching points may be added to one system or both systems of warp ends, and on long floats more than one stitch may be incorporated.

Fig. 50 shows two repeats each way of the six-up-five-down corkscrew weave in which an additional raiser or stitching point has been inserted in such a manner as to break each long float of sinkers evenly.

Corkscrew weaves may also be constructed filling-wise, as shown in Fig. 51. In this type of corkscrew weave the number of picks per inch should always exceed the number of ends per inch, as in regular filling-rib weaves. The warp yarn will then be almost entirely hidden between the two systems of filling.

Corkscrew weaves can also be constructed from twills other than the 45°.

Figured Corkscrew Weaves and Shaded Twills

Corkscrew weaves may be figured by the omission of raisers in one system or both systems of warp ends; by skipping groups of ends or picks, or both ends and picks; by curving the twill; or by combining left twill and right twill.

Figuring by the omission of raisers allows the filling to float on the face of the fabric, and is usually executed according to a motif. Contrasting counts of yarns, colors, or materials enhance the effects produced.

Fig. 52 shows the four-up-three-down corkscrew twill figured according to the one-up-three-down crowfoot-twill motif—the omission of raisers effecting the figure. Each block in the motif represents seven ends and seven picks.

Fig. 53 shows a curved corkscrew weave. One repeat of the warp and two repeats of the filling are exhibited.

Fig. 54 illustrates a suspender fabric in which a curved corkscrew weave similar to that shown in Fig. 53 is employed. This material is 1½ in. wide and has 188 ends of 150/2 rayon in the warp. The edge consists of 40 ends of 150/2 rayon. It interlaces in 2-2 warp-rib tubular-weave order. The filling is 20/2—two ends of cotton, 56 picks per inch. The material is so designed as to be reversible, although the color effect is not exactly the same on both sides.

Fig. 55 shows the effect produced by alternating five picks of the six-up-seven-down right-hand corkscrew twill weave with five picks of the six-up-seven-down left-hand corkscrew twill weave and forming clear breaks at each change in the weave. The design shows two repeats of filling and one repeat of warp.

In shaded twills the weave gradually changes from filling effect to warp effect (or vice versa) and back again in one repeat of the weave. The change may be accomplished by either of two different methods—one automatic, the other mechanical.

Automatic shading is effected by the selected order of interlacing alone, and requires no additional treatment. The steep twills are the most suitable for the purpose, although the reclining twills may sometimes be used to advantage. The weave should have several (three, four, or more) floats represented both above and below the divisional line of the twill. The value of the numerals above the line should either increase or decrease in the order of their occurrence, and the value of those below the line should occur in the opposite order.

Fig. 56 shows two repeats each way of the $\frac{4\ 3\ 2\ 1}{1\ 2\ 3\ 4}$ 63° steep twill. (If viewed sideways, this design will represent a left-hand twill formed by alternating one end of the $\frac{4\ 1\ 1}{1\ 1\ 2}$ twill with one end of the $\frac{2\ 1\ 1}{1\ 1\ 4}$ twill in 27° reclining-twill order.)

Fig. 57 shows the $\frac{5\ 4\ 4\ 4\ 3\ 3\ 2\ 2\ 1\ 1}{1\ 1\ 1\ 1\ 1\ 1\ 2\ 2\ 3\ 3}$ 70° steep twill, and is one repeat high and two repeats wide.

In mechanically shaded twills the order of interlacing does not remain exactly the same throughout the design. Instead, the weave is altered at intervals by the addition or omission of raisers according to the effect desired.

After the foundation weave has been painted in over the entire area laid out for one repeat of the design the ends are marked off into equally or unequally sized groups. In the first group of ends the weave may be allowed to remain as it appears. In the second group (if the weave is to be changed from filling effect to warp effect) a second raiser is added to each end and may be placed in the square adjacent to the first raiser, or a sinker may be allowed to separate the two raisers (the weave then reading one-up-one-down-one-up. In each successive group of ends an additional raiser is incorporated until the maximum number of raisers has been added; then reverse order is followed to a repeat.

Fig. 58 explains the foregoing and shows the gradual transition of the one-up-seven-down twill to the seven-up-one-down twill.

Fig. 59 shows a shaded weave constructed from a fancy pointed twill.

Other twill-weave derivatives may be treated similarly.

This article, concluded from our issue of Aug. 30, is the eighth of a series on the design and construction of narrow fabrics by Edwin J. Gibbons, instructor in textile design at Samuel Slater School, Pawtucket, R. I. Dates and subjects of previous articles were as follows: edges, Nov. 16, 1929; edge wires, Dec. 28; tubular weaves, Jan. 25, 1930; foundation weaves, March 1; varied effects related to plain weave, April 5 and 12; drawing-in drafts, June 21; chain drafts and reeding, Aug. 2. *All rights to the further use of these articles are reserved by the author.*